

# DIGITAL PhotoPro®

New Photo/Video Drones  
Hit The Market! Pg. 22



## Fashion Forward

Best Lighting Techniques  
From 5 Top Pros

Must-Have Gear To Break  
Into Still + Motion

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Are So Hot For Fashion

## Full-Frame Roundup

Latest DSLRs,  
What's New In Mirrorless  
+ Medium Format  
& Beyond

**Cathleen Naundorf**

High-Concept,  
Haute Couture,  
Shot On Polaroid!

**Dixie Dixon**

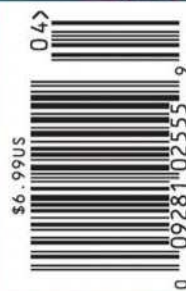
Creating The  
Romantic  
Illusion

**Zhang Jingna**

Bridges The  
Gap From  
Fine Art To  
Fashion



April 2015



# SONY

# α

# POWER OF STABILITY

Handheld – α7 II, 70–300 mm F4.5–5.6 G SSM II lens, 1/4 sec., F8, ISO 100



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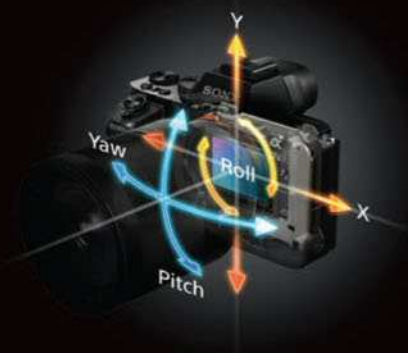
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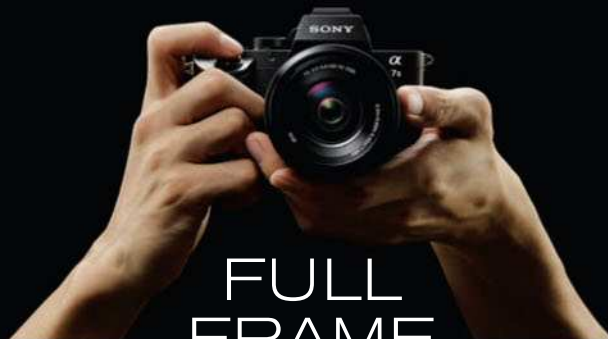
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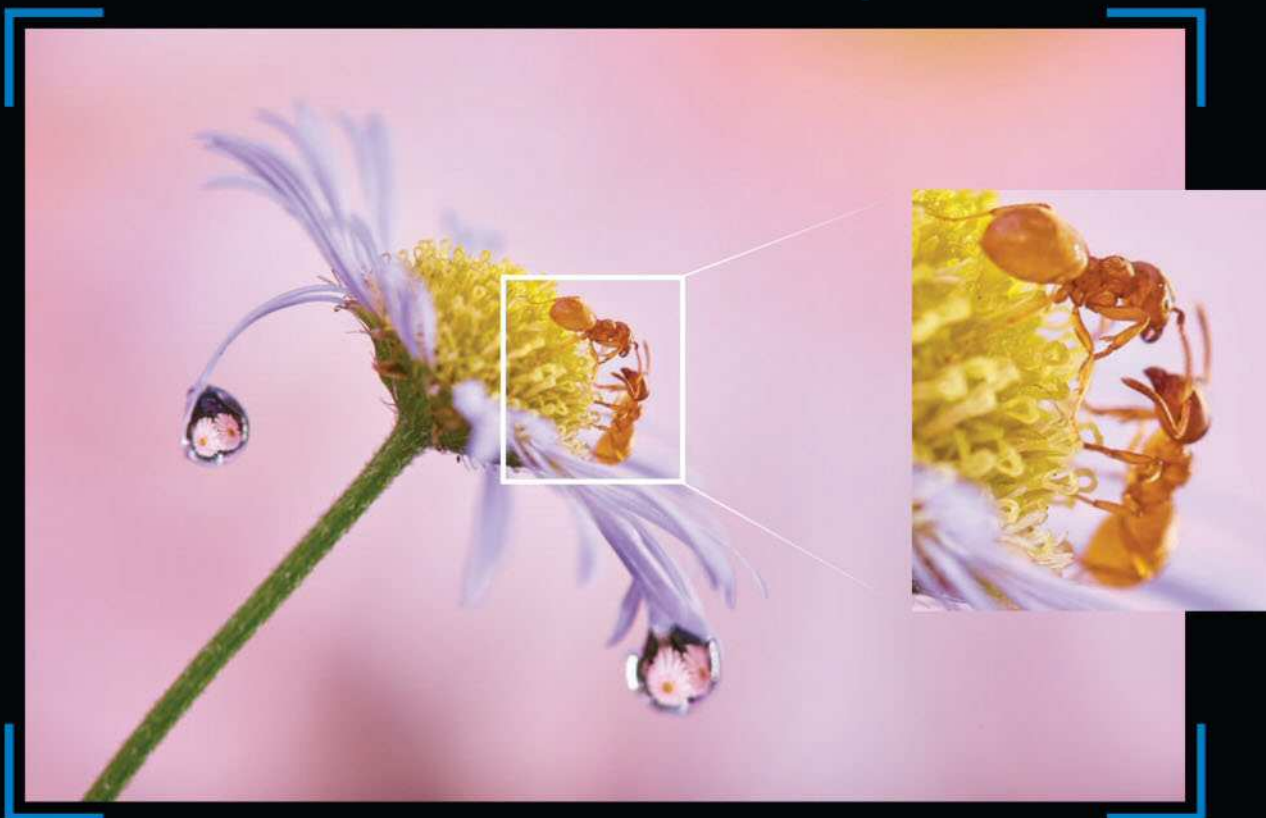
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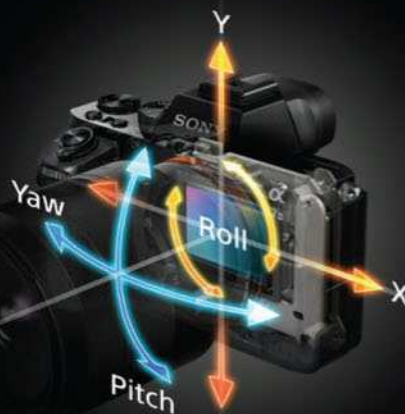
# FREEDOM



**With built-in 5-Axis Stabilization, the remarkable full-frame Sony  $\alpha 7R II$  makes every mountable lens in your arsenal a stabilized lens to let you chase down the subject rather than your tripod**

Image stabilization has empowered more nature photographers to get sharp, inspiring photos by freeing us from the bulky tether of a tripod. In the full-frame  $\alpha 7R II$ , Sony has taken stabilization to the next level with the most advanced technology currently available, a revolutionary 5-Axis Stabilization system.

In the field, photo opportunities like the one in this macro photo are fleeting. These ants didn't pause and wait for their close-up. Being able to work handheld and adjust your position to follow the action is critical, especially with macro subjects like this. But it's no good if the image is blurry. The 5-Axis Stabilization system built into the Sony  $\alpha 7R II$  gives you the freedom to move and shoot handheld at shutter speeds that would have been impossible without it. The system accounts for horizontal and vertical shift, as well as roll, pitch and yaw movements. The full-frame  $\alpha 7R II$  image sensor physically moves to



counteract camera shake and keep these ants and the flower tack sharp. And because 5-Axis Stabilization is built into the camera, any lens that's mountable to the  $\alpha 7R II$  is stabilized\*.

The  $\alpha 7$  line of full-frame, interchangeable-lens mirrorless cameras have captured the imagination of photographers everywhere. In addition to in-camera 5-Axis Stabilization, the  $\alpha 7R II$  has the advanced Fast Hybrid AF system that combines phase-detect and contrast-detect technologies with the high-speed BIONZ<sup>®</sup> X processor. It's fast and accurate, and when it has your subject, it won't let go.

In the  $\alpha 7R II$ , breathtaking image quality meets unrivaled shooting freedom. The camera is packed with innovation to give you confidence, no matter how big or small your subject is.

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*By Kristan Ashworth >>  
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Cathleen Naundorf

## Editor's Note

I have to admit that seeing *The Devil Wears Prada* changed the way I looked at fashion. I always had an appreciation for fashion photography—dynamic and imaginative images that delve the viewer into a fantasy—but the fashion itself, that is, the clothing, shoes and accessories, had never interested me. I had thought of the fashion industry as being a benefactor to a class of photographers, giving them the resources to

explore fantasy and the human body and to stretch their creativity. It's not that I thought the fashion industry was frivolous, by any means. I think it's fair to say I just didn't get it.

In the film, there's a scene where Meryl Streep schools Anne Hathaway on fashion as art that you wear by tracing the lineage of Hathaway's innocuous blue sweater back to a groundbreaking line from Yves Saint Laurent like a genealogist describing how an overweight, video game-addicted child is

a direct male descendant to Genghis Khan. Fashion is art that you wear, and fashion photography amplifies that art.

In this issue, we put several leading fashion photographers from different areas of the fashion continuum on display. Zhang Jingna's work is the kind of incredibly polished imagery that jumps off the page. Zhang works for perfection in-camera, then takes each photo to a higher level with her postprocessing regimen. That postprocessing is aimed at



maintaining the realism of her models. Having moved from Singapore to New York, Zhang is part of the globalization of fashion aesthetics.

Cathleen Naundorf is a renowned France-based photographer who works with several of the most important fashion houses in the world, and she's doing it with large-format cameras and film—frequently, Polaroid film. The photos, in black-and-white and pastels, are both intense and ethereal, showing all of the inherent flaws and idiosyncrasies of the

film emulsions. The emphasis on the human form is evident in every image.

In addition to the portfolios in this issue, we reached out to a number of photographers for their thoughts on lighting tools and techniques. They walk us through their workflow, with everything from ambient to strobe to continuous lights and how they craft a specific look.

Finally, we've been working to change the look, function and content at **digitalphotopro.com**, and now it's live. Among other things,

you'll notice new hands-on reviews of gear. Working with *DPP* Contributing Technical Editor David Schloss, we'll be reviewing everything from cameras and lenses to accessories and web services. I want our reviews to serve you, the *DPP* audience, so if there's specific information you'd like to see, drop me a line at [crobinson@wernerpublishing.com](mailto:crobinson@wernerpublishing.com) or on Twitter @DPPRobinson.

—Christopher Robinson,  
Publisher/Editor

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*Photography By Alessandro Dal Buoni, Jake Hicks, Lara Jade, Rossella Vanon and Rob Van Petten*



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Student Photographer: Kristina Varaksina  
School of Photography



In a nod to the interconnectedness of the 21st century, Zhang Jingna keeps in touch with a loyal following and the world, in general, through a blog. In addition to being good promotion, Zhang wants to be an inspiration and to provide useful information for other photographers. She explains, "I like teaching. Anyone who has done it, no matter how frustrating it is, finds a certain satisfaction in it. But, honestly, a lot of it also comes from wanting to debunk the people who assume everything is easy or can't be accomplished unless you had a lot of money. I didn't grow up in a wealthy family, I was fed through school on the charity of others, so through all the hardships of growing up, I guess I always feel a little insulted when people assume it was easy for me, or try to find excuses for themselves to not do something. So I'm kind of saying that's not it. You can do it, too."



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### 6G-SDI Technology

Mini Converters include multi rate 6G-SDI so you're always future proofed! 6G-SDI is fully compatible with all your existing SD and HD SDI equipment and will automatically switch when you need to run Ultra HD!



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Cathleen Naundorf's talents are employed by the likes of Chanel, Dior and Valentino, among others. In her book, *Haute Couture: The Polaroids of Cathleen Naundorf*, she brings together a collection of large-format photographs that were all made with Polaroid. Naundorf studied painting, and the influence is clear in her photography. See our interview with Naundorf in this issue of *DPP*.



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Zhang Jingna

Based in New York, Zhang Jingna has an international client base. The young photographer has been in the middle of the violent swings the professional photography business has endured over the past few years, yet she's particularly optimistic about the future. She explains, "You'll hear photo agencies complain that the economy isn't recovering well enough, and that some of them are restructuring or rebranding to bring in more jobs, but I just think it's mostly about adapting to the times. The Internet has made this industry so much more accessible; anyone can pick up a camera or makeup kit and learn these skills on the Internet. Given time, the competition will increase, it's only natural, and it has. So the influx of many new talents will make the already saturated market even more so, but personally I think it raises the bar and quality of photography overall, and I'm interested in seeing where it all goes." See more of her work in the portfolio feature on Zhang in this issue.

Perspectives of power



Focal length: 15mm Exposure: F/11 0.6 sec ISO400 © Ian Plant

new

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## New Tools Of The Trade



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### << Nikkor 300mm F/4E PF ED VR

Nikon has developed a travel-friendly **AF-S Nikkor 300mm f/4E PF ED VR** lens that's 30% shorter and 1.5 pounds lighter than its predecessor. This size and weight reduction is due in large part to Phase Fresnel optical technology that also contributes to a correction in chromatic aberration. The lens utilizes 4.5 stops of Vibration Reduction for sharp images when handheld, with additional VR modes for Sports & Action and Tripod Detection. Extra-low dispersion glass has a Nano Crystal Coating to prevent ghosting and flare, as well as a fluorine coating to repel dust, water, grease and dirt. New electromagnetic aperture control adds precision to continuous shooting. Silent Wave Motor offers quiet AF operation with quick manual override from a focus ring spin. List Price: \$1,999. **Contact:** Nikon, [www.nikonusa.com](http://www.nikonusa.com).

### Sony Action Cam >>

Sony has stepped into the ring with GoPro, announcing its own POV 4K action cam. The compact **FDR-X1000V** shoots 4K for playback on a 4K TV through HDMI, full HD video at 120p and standard HD at 240p to capture slow-motion shots. The Zeiss Tessar lens has an ultrawide 170° field of view. The camera also features a back-illuminated Exmor R CMOS sensor and BIONZ X processor. Updated Steady Shot technology with electronic image stabilization provides vibration-free footage for quick action and aerial shots. The FDR-X1000V has added wind noise reduction to decrease interference with the stereo microphone. Manual controls include white balance, auto-exposure shifting, loop recording and burst still-image shooting. The camera is also compatible with the Ustream platform. An RM-LVR2 LCD Live View Remote is waterproof down to 10 feet for frame check, record start/stop, playback and file deletion. A Highlight Movie Maker feature automatically edits together a short MP4 highlight reel for quick sharing. The official Sony Action Cam app will be released in Spring 2015. List Price: \$500 (with waterproof case); \$600 (with waterproof case and RM-LVR2). **Contact:** Sony, [store.sony.com](http://store.sony.com).





## << Aries Blackbird X10 Camera Drone

The **Aries Blackbird X10** camera drone provides six-axis gyro stabilization and GPS accuracy for its 16-megapixel still and 1080/30 fps full HD video onboard camera. The weather-protected body integrates a 2.4 GHz WiFi connection for advanced control via an Android/iOS mobile app. The mobile device can be secured directly to the controller, while the app allows you to dictate start/stop video recording, still shooting, lens field of view and more. The Aries Repeater (shipped with the Blackbird X10) increases the WiFi communication distance up to 1,000 feet, when needed. The ergonomic grip controls climb, descend, roll and pitch. If there's a loss of control, the GPS-guided system hovers, maintaining height and position. If the transmitter signal is lost, the automatic Flight Control system pilots the quadcopter to a safe height and lands safely at its starting point. The easily accessible 5300 mAh lithium battery system provides 25 minutes of flight time on a single charge with audio and visual alerts when the battery is running low. Estimated Street Price: \$799. **Contact:** Adorama, [www.adorama.com](http://www.adorama.com).

## Fujifilm XF 16-55mm F/2.8 R LM WR >>

**Fujifilm's** new wide-angle-to-portrait-length lens is built to withstand harsh conditions. At a 24-84mm equivalent length for a 35mm camera, the **XF 16-55mm f/2.8 R LM WR** lens is compatible with all X-mount mirrorless cameras. With 14 weather seals for moisture and dust, the lens can withstand temperatures as low as 14° F. Seventeen lens elements are distributed in 12 groups, with three extra-low dispersion elements for controlling chromatic aberration and three aspherical elements to reduce distortion through zoom. A Nano-GI coating is used to minimize surface reflections and prevent lens flares and ghosting. Its Twin Linear Motor autofocus system is quick and near-silent, which is particularly useful for video work. Estimated Street Price: \$1,999. **Contact:** Fujifilm, [www.fujifilmusa.com](http://www.fujifilmusa.com).



## Lexar microSD UHS-II >>

While compatible with tablets and smartphones, photographers most likely will be interested in **Lexar's Professional 1000x microSD UHS-II** for its use with quadcopters. Available in 32 GB, 64 GB and 128 GB capacities, the microSD cards capture, play and transfer 1080p full HD video, as well as 3D and 4K footage. The card is fully backward-compatible with UHS-I cameras and non-UHS-I devices, so any user can still take advantage of the 150 MB per second read transfer speed of the UHS-II technology when paired with the included USB 3.0 reader. A lifetime copy of Image Rescue software is included for recovery of lost or deleted files. List Price: \$59 (32 GB); \$109 (64 GB); \$189 (128 GB). **Contact:** Lexar, [www.lexar.com](http://www.lexar.com).



## Rugged Hard Drive

Travel photographers will want to take note of the new rugged drive solutions from **G-Technology**. The **G-DRIVE ev RaW with Rugged Bumper** is a USB 3.0 bus-powered drive. Not only is it 35% lighter than the original G-DRIVE ev, the 1 TB capacity drive can survive a 1.5-meter drop. G-Technology has also developed an all-terrain case (ATC). Removable and compatible with the Evolution Series G-DRIVE ev or G-DRIVE ev SSD, it can be purchased with the G-DRIVE ev RaW drive, as well. When tethered to the removable drive, the ATC case protects the drive from drops of up to two meters, and its watertight compartment ensures the drive floats when dropped in water. The case additionally protects from pressure, shock, water and dust. List Price: \$99 (G-DRIVE ev RaW 500 GB); \$129 (G-DRIVE ev RaW 1 TB); \$229 (G-DRIVE ev ATC with Thunderbolt 1 TB); \$179 (G-DRIVE ev ATC with USB 3.0 1 TB); \$129 (ATC with Thunderbolt); \$79 (ATC with USB 3.0). **Contact:** G-Technology, [www.g-technology.com](http://www.g-technology.com).

# DPP In Focus

## New Tools Of The Trade



### << House Of Cards

Keep all varieties of cards safe with the **House of Cards** by **MindShift Gear**. The card organizer holds six CF cards, three SD cards and provides a built-in business card holder. Orange elastic bands ensure cards stay securely in place while giving silent access when needed. Clear windows let you easily differentiate cards from one another. The Tahoe Blue organizer color makes it stand out in a filled pack, while the removable tether clip can attach the House of Cards to the outside of a bag, belt or clothing for quick card access. The organizer has a water-resistant exterior. List Price: \$19. **Contact:** MindShift Gear, [www.mindshiftgear.com](http://www.mindshiftgear.com).



### LUMIX ZS50

The new **Panasonic LUMIX DMC-ZS50** is a pocket-sized camera that packs a lot of punch. With a 12.1-megapixel MOS sensor and ultrawide-angle 24mm Leica DC Vario-Elmar lens, the 30x optical zoom provides a 35mm equivalent of 24-720mm zoom action. The large pixel size produces increased low-light sensitivity with a 6400 ISO. With the Hybrid Optical Image Stabilization Plus 5-Axis System, even fully zoomed videos are smooth and free from handheld jitters. The Venus Engine records 1080p60 full HD video in AVCHD progressive format. The ZS50 camera body offers both a 1,166K-dot-resolution Live View finder with eye sensor and 3-inch LCD display screen. A lens barrel control ring offers smooth and precise control over exposure and zoom, as well as access to aperture, shutter speed, focus and effects modes. The camera connects to phone and tablet devices through NFC or QR codes to control the camera from a distance or to instantly share images. Estimated Street Price: \$399. **Contact:** Panasonic, [shop.panasonic.com](http://shop.panasonic.com).



### << Lighting Modifiers

**Manfrotto** has launched a new collection of lighting modifiers. Available in multiple sizes, the lightweight **Softboxes** have been designed specifically for easy setup and can be used on- or off-camera. The **Duo Umbrella** utilizes translucent white fabric and a removable black back cover for shoot-through and bounce light abilities. The Softboxes and the Duo Umbrella are collapsible and come with a case. The **Magnetic Background Mount** uses

neodymium magnets to securely attach any steel-rimmed collapsible background to a lightweight stand for quick versatile shoots. The triple-stitched triangular and circular **Reflectors** and **Diffusers** control light in any situation. Highly portable, they collapse to one-third their original size and come with a carrying case. List Price: \$68-\$324 (Softboxes); \$56 (Duo Umbrella); \$194 (Magnetic Background Mount Kit); \$43-\$124 (Reflectors and Diffusers). **Contact:** Manfrotto, [www.manfrotto.us](http://www.manfrotto.us).



### << Multiblitz V6 LED Light

**Multiblitz** has released a new low-power-consumption continuous **V6 LED light** for photo and video work both indoors and outside. At a lightweight three pounds, the V6 LED puts out 2200 lux at a six-foot distance with the FILNOS

standard reflector (6000 lumens) at full power while providing 50,000 hours of lifetime usage. The 4000K color balance shifts slightly warm to flatter skin tone. The V6 LED light includes a multi-voltage supply unit that continuously dims light output over a 2.5 f-stop range. Compatible with P-type modifiers and PROPAC battery packs. List Price: \$799. **Contact:** Multiblitz, [www.multiblitzusa.com](http://www.multiblitzusa.com).



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## Perfection Pro Scanner >>

Archiving your film, slides and print photos has become much easier with the **Epson Perfection V850 Pro Scanner**. Utilizing high optical resolution with 4.0 Dmax optical density, the V850 Pro produces a broad tonal range that accurately represents your image. The Dual Lens Scanning System auto-selects resolution from two lenses—a 4800 dpi High Resolution Mode for reflective images up to 8.5x11 inches/transparencies up to 8x10 inches or a 6400 dpi Super Resolution Mode for film. The Ready Scan LED light source uses 23% less power for faster scanning with no necessary warm-up time. Two sturdy film holders with three height adjustment levels and an anti-Newton ring plate ensure consistent quality scanning. Digital ICE technology automatically removes dust, scratches and creases from film, slides and photos. The High Pass Optics with anti-reflection optical coatings and high-reflection mirror increase speed by 33% while also increasing scan quality. List Price: \$949. **Contact:** Epson, [www.epson.com](http://www.epson.com).



## The Latest In Aerial Robotic Drones

With more than 100 companies showing drones at CES earlier this year, it's fair to say the copters are more than just a flyby fad. In fact, the upcoming NAB show is preparing an entire Aerial Robotics and Drone Pavilion featuring a fully enclosed "flying cage" for active demos. As we move into the year, here are several drone options from CES that we're keeping track of as they continue to develop and enter user hands.

Known for their innovation in electric aviation with manned aircraft and hobby radio-controlled fliers, **Yuneec** has recently combined their aerial technology with the photo/video space. The **Q500 Typhoon Quadcopter** uses its own 12-megapixel, 1080p full HD photo and video camera attached to the ready-to-fly system via a 3-axis brushless precision gimbal. The ground station controller uses a 10-channel, 2.4 GHz RC transmitter to support a 5.8 GHz video downlink to provide streaming video to the transmitter LCD touch screen. The Q500 Typhoon flight time is 25 minutes on a single charge with the included battery. List Price: \$1,299. **Contact:** Yuneec, [www.yuneec.com](http://www.yuneec.com).



Action-adventure athletes and independent filmmakers alike will be pleased with two Kickstarter auto-follow drone projects that have been successfully crowdfunded—the AirDog and HEXO+.

The **AirDog drone** tracks your position and follows your movement using a waterproof Air Leash wrist system with a range of 1,000 feet. Designed with a protective housing for a GoPro, the built-in gyroscope provides stable and smooth footage with pitch control for active and accurate framing. The iOS and Android app sets camera movement between Auto Follow, Relative Position Follow, Follow Track, Look Down, Hover and Aim, and Circle. The removable interchangeable 14.8V 5500 mAh LiPo batteries provide a 10- to 20-minute flight time, depending on speed, which goes up to 45 mph. The AirDog is easy for travel, with arms and blades that fold up to protect parts and reduce size.

List Price: \$1,295. **Contact:** AirDog, [www.airdog.com](http://www.airdog.com).



The **HEXO+ self-flying camera drone system** positions a 3D gimbal mount to the front of the copter for a fully unobstructed view. Compatible with GoPro cameras, the mount utilizes 3-axis stabilization for high-quality 4K video. What sets this drone apart is its functionality with the included HEXO+ Director's Toolkit app. Using the app, you're able to set the framing and movement for your shot, including Hover, Follow, 360° Selfie, Dolly and Fly Away. Set the app-loaded device in your (or your subject's) pocket and the drone follows you, maintaining the framing and controlling camera movement based on your preset specifications without an extra leash accessory. The HEXO+ also automatically takes off and lands. Preordering is available now. Shipping begins in September 2015. List Price: \$1,149. **Contact:** HEXO+, [hexoplus.com](http://hexoplus.com).





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# Visioneer's Gallery

Art In Many Dimensions

## Ghiora Aharoni's "Missives" project is an exploration of collective memory

By Baldev Duggal

**Frank Lloyd Wright once claimed that the mother of all arts is architecture.** The mind of the architect, trained in the art and the science of design, craftsmanship, light, material, form and texture, applies creative thinking to building structures and creating environments that shape us. Many architects I've met aspire to create fine art while on their journey of building structures, but rarely do I meet someone who actually makes that leap and effortlessly travels both paths simultaneously. Ghiora Aharoni, the New York-based architectural designer of Israeli origin, is that exceptional artist whose work imbibes a unique convergence of drawing, sculpture, materiality, texture, light and art to deliver both functional and artistic experiences.

Aharoni has been practicing from his multidisciplinary studio for art, architecture and design in New York City, which he founded in 2004. Duggal had the pleasure of working with him to help produce works for his exhibit "Missives" at the Dr. Bhau Daji Lad Museum in Mumbai, India. The exhibit is an extraordinary multidimensional rumination on the idea of collective memory.

"Never say there is nothing beautiful in the world anymore." "There is always something to make you wonder in the shape of a tree; in the trembling of a leaf." Stenciled on the surface of two table-like glass enclosures, these statements frame thousands of vintage photographs stacked in the background. Collected by Aharoni through his travels across India, a place he feels deeply connected with, these photos entice the viewer to stop, to look, to seek, to recognize the hundreds of anonymous faces and moments that dot the scenes in the pictures. Who are these people? No one knows. Yet their presence in these sacred glass boxes



©2013 Anil Rane

reflects a larger question. Who are we? Do our stories, our memories matter?

The idea for this multimedia museum exhibition featuring photography, sculpture, fabrics, collage, embroidery and installations began with the discovery of a small box of love letters Aharoni's mother wrote in the 1950s as a teenager to a boy in Jerusalem. Aharoni deconstructed the letters and reconstructed them in collages on different textures.

"When I first received the box, there was a crumpled letter on top," recalls Aharoni. "In the process of transferring these letters into my art form, my first reaction was to bring it back to the original state. But by crumpling them, I wanted to protect her privacy."

Aharoni transforms this "crumpled paper" into exquisite landscapes of memory. The translucent paper on which we digitally printed the letters and sketches Aharoni created represents ethereally the fragile idea of memories. Mapping the random moments and memories in the vintage photos against memories in his mother's letters, Aharoni explores two parallel love stories—his mother's and his own love for India. Each display, with the crumpled letters in which the text is left as indistinguishable as the stories of the people in the photos, conveys parallelly lived universes and their relevance in a shared future.

"The work explores universal notions of desire, rituals, courtships and collective memory," says Aharoni.

In an imaginative use of photography, Aharoni features two platforms in

the exhibit, strewn with hundreds of vintage photos, with two armchairs, perched facing each other. The chairs, upholstered in digitally printed photographs, feature sculptural arms outstretched from their backs, each arm holding crumpled letters. The platform is stenciled with the phrases "To Jerusalem", "From Jerusalem..."

A striking example of the deeply multidimensional sense of texture and materiality Aharoni possesses lies in his use of vintage Phulkari fabrics displayed in the exhibit. In the Phulkari, a fabric embroidered intricately by women in Punjab as a dowry gift, Aharoni sees the form of a love letter. He sets the backdrop of the Phulkari to create his own memories. In fabrics that transcribe the old with the new, Aharoni uses embroidery, letters in Hebrew, sketches of architecture rising from traditional geometric motifs, architectural details of a ceiling and outlines of caribou heads with antlers in fabrics stretched on vintage Indian looms. The story of his mother's love hovers in crumpled cloud forms above the innumerable stories lying untold across the thousands of pictures, disposed and anonymous. By bringing specificity and form to this shapelessness of our shared experience of life, Aharoni brings us face to face with the penultimate truth of human existence: our stories and our memories. His personal story gives meaning to ours. We're connected through the strands of our

stories, in how they define us and shape us, yet when we're no longer, what's left is a shapeless form; an ethereal cloud of our memories....

### >> More On The Web

You can see more of Baldev Duggal's Visioneer's Gallery columns on the DPP website at [www.digitalphotopro.com](http://www.digitalphotopro.com).

Aharoni's artworks are characterized by an interest in exploring dualities, such as the intersection of religion and science, or the relationship between nature and architectural form. Many of his works take traditional objects or symbols—such as sacred texts or cultural artifacts—and subvert or synthesize them in ways that challenge their conventional context. In 2012, Aharoni created a Hebrabic/Arabrew® script (a combination of the Hebrew and Arabic alphabets), which was used in a large-scale installation commission in Manhattan entitled “The Divine Domesticated.” Four panels from the installation were permanently installed later that year in the theater lobby of the 14th Street Y. In 2010, a permanent, site-specific installation of photographs from Aharoni's “Munnar Series,” which captures the spontaneous patterns and vibrant topographies of Indian tea plantations, was commissioned for the lobby of a landmark building in Manhattan. Since establishing his studio, Aharoni has designed numerous architectural projects in New York, ranging from the de Kooning residence and a duplex penthouse in the West Village to a downtown nightclub and the offices of an art law firm on 57th Street. Aharoni's furniture designs, which often blur the lines between art and design, are also in numerous private collections.

Aharoni's profound imagination, his ability to absorb nuances across cultures, his meticulous choices of inclusion and elimination, and his fine grasp of the visual palette across multiple dimensions allow him to break through the usual limitations of storytelling. He makes us want to travel with him, to go find the details that we overlooked, to give form to our own very personal experiences and discover them in a larger context of culture and memory. It's an honor to work with artists such as Aharoni to expand our consciousness and to help us uncover the universal stories that are hidden within our specific experience of life. DPP

*Visit Duggal at [www.duggal.com](http://www.duggal.com) or check out the blog at [www.duggal.com/connect](http://www.duggal.com/connect) and see their newest articles.*

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## Photoshop's Color Lookup makes complex color effects fast and easy

By John Paul Caponigro

Originally designed for color-grading film and video, Photoshop's Color Lookup feature offers novel ways to adjust color that quickly will reveal new possibilities in your images. Capable of performing extremely complex calculations extraordinarily efficiently, color lookup tables (LUTs) work by looking up a source color in a table and using the replacement color specified in the grid to transform it for the final destination.

Like Match Color and Gradient Map adjustments (go to [digitalphotopro.com](http://digitalphotopro.com) to see my recent articles on Match Color and Gradient Map), the color effects Color Lookup generates are so complex, they're not easy to previsualize. Like anything new, this takes practice. And these are new! Experiment, and you'll find many rich possibilities. Unlike Match Color, Color Lookup is loaded with presets that will allow you to quickly explore many different effects, ones that are far more sophisticated than Gradient Map presets. In this way, using them can be as easy as using many smartphone app effects.

Color Lookup offers three types of LUTs, each with its own drop-down menu, which contains multiple presets: 3DLUT File (27 presets); Abstract (15 presets); and Device Link (5 presets) for a combined total of 47 presets. While you can only apply one Color Lookup with a single adjustment layer, you can use multiple adjustment layers to successively apply as many Color Lookups as you like. Perhaps not infinite, the possibilities are many.

What's the difference between these three types of LUTs?

**3DLUT File.** Dependent on color space, 3DLUT presets load and export files with 3DL, CUBE, LOOK and CSP extensions. While Gradient Map adjustments use one channel (the grayscale values of the combined RGB



1) Original image



2) The Color Lookup Pastel 8 Hues creates very strong color effects

channel), these lookup tables use all three color channels. They don't generate 3D effects as the name may suggest.

**Abstract.** Abstract presets load and export ICC profiles. These settings aren't color space-dependent so they maintain consistent appearances during conversions to alternate color spaces and are favored when the color space of

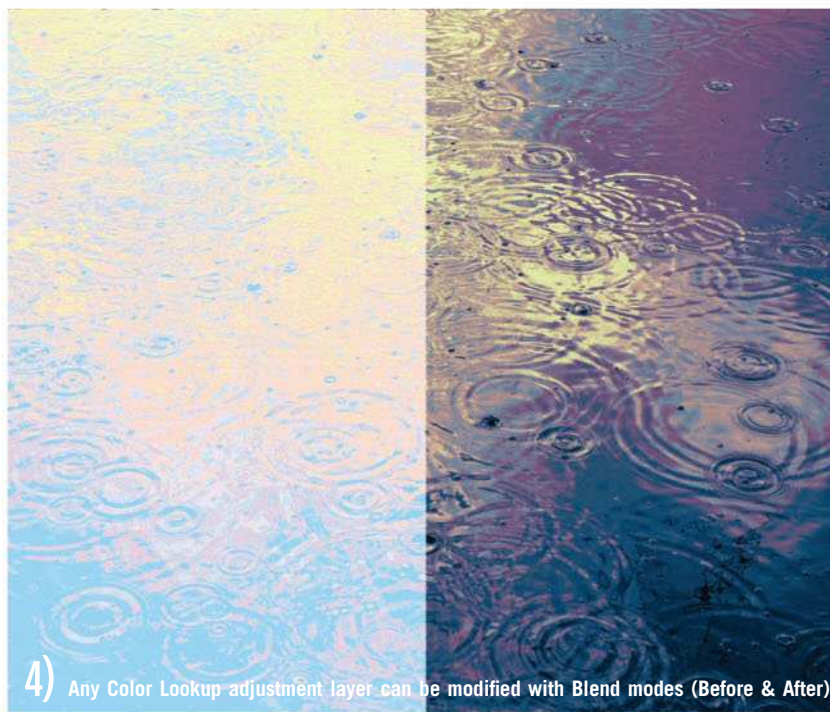
a file is likely to change during a workflow, as it may when moving files across different output devices or to video.

**Device Link.** Also dependent on color space, this format is smaller and more portable than 3DLUTs.

Both 3DLUT File and Device Link presets are color space (sRGB, ColorMatch, Adobe1998, ProPhoto,



3) The Color Lookup Cobalt-Carmine creates a subtle effect



4) Any Color Lookup adjustment layer can be modified with Blend modes (Before & After)



5) The Color Lookup window



6) 3D LUT File presets



7) Abstract presets



8) Device Link presets

9) Layers provide extra control—Opacity, masks, Blend mode



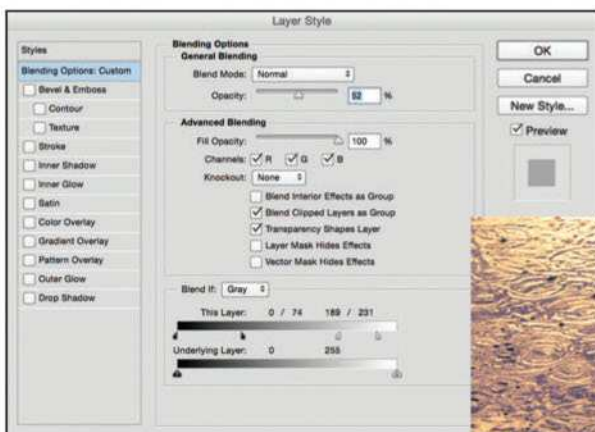
etc.)-dependent and are recommended for use in the color space they were created in—all of the RGB presets were designed for use in sRGB. (LAB supports only Abstract presets. CMYK also supports Device Link, but not 3DLUT File presets.) This won't stop you from generating impressive color effects in other color spaces. You can use many presets with color spaces other than the ones they were intended for, although the visual appearance they generate will be somewhat different. You need to keep this in mind when you're trying to achieve consistency between different files. Be mindful that if you make a color space conversion with an active Color Lookup adjustment layer, the appearance of the file most likely will change during conversion. To get around this, you can merge the effect into a layer before making the color space conversion. Remember this when you create your own Color Lookup presets.

### Get Even More Control

At first glance, you may be tempted to think that you have limited control over Color Lookup effects. You either like an effect or you don't. Don't move on too quickly. Take another look. You actually have lots of control. When you apply a Color Lookup table as an adjustment layer, you can modify the effect by using Opacity and/or Fill (globally reducing strength with a slider), layer masks (locally reducing strength with a brush), Blend If sliders (removing the effect from shadows and/or highlights with sliders), and Blend mode (modifying the ways color adjustments are calculated). Even with all of this control, it's likely that you'll want to further refine the effects of a preset with additional color adjustments using other tools like Curves and Hue/Saturation.

### Make Your Own Presets

You can also generate your own Color Lookup presets. To do this, create a color



## 10) Layer Styles' Blend If sliders allow you to reduce effects from shadows and/or highlights

effect you like with any combination of adjustments layers, Opacity and Fill, Blend If sliders and Blend modes. Note that layer masking and transparency won't be included because alpha channel information in alpha channels isn't included in the recipe. Then go to File > Export > Color Lookup Table, name the file, and click OK. I recommend the titles you give your presets include the color space you created them in. These files are stored in



>> **More On The Web**  
John Paul Caponigro's in-depth instructionals on image-processing and printing techniques are available as an extensive archive online at [digitalphotopro.com/technique/revolution](http://digitalphotopro.com/technique/revolution).



Photoshop's Presets folder, or if they're saved as ICC profiles, in your operating system's Profiles folder. You can now use your custom preset at anytime on almost any file by making a Color Lookup adjustment layer and choosing your preset. You can share your custom

Color Lookups with others by giving them these exported files. Color LUTs created in Photoshop even can be used in other programs such as After Effects, Premiere, SpeedGrade and other applications that use color LUTs.

Using Color Lookup adjustment

layers is one way of creating a condensed layer stack, but it comes with a price—you won't be able to adjust or mask individual adjustment layers. If you'd like to do this, as an alternative solution, you can place all of the adjustment layers into a Group and drag and drop the Group

from one file into another, when needed.

If you want to produce a Color Lookup preset and achieve the greatest consistency in appearance between multiple images, you'll want to use a file that's representative of a majority of the images it will be used on and include a professional color chart like X-Rite's ColorChecker. This is especially important when processing video.

Using Photoshop's Color Lookup, you can choose to create color effects as subtle or dramatic as you like. This game-changing color-adjustment tool may seem exotic at first because it offers a new way of thinking about and seeing in color. Once you become more familiar with this mind-set, you'll truly begin to see with new eyes. Isn't that what it's all about?

DPP

*John Paul Caponigro, author of Adobe Photoshop Master Class and the DVD series R/Evolution, is an internationally renowned fine artist, an authority on digital printing, and a respected lecturer and workshop leader. Get PDFs and his enews Insights free on his website at [www.johnpaulcaponigro.com](http://www.johnpaulcaponigro.com).*

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**Mid-range zoom lenses**—those that go from moderate wide-angle to portrait telephoto—are versatile tools that can cover a wide range of subject matter. But they're especially well suited to fashion/beauty/portraiture work, letting you frame from full body to tight headshot from distances that provide pleasing perspec-



Canon EF 24-70mm f/2.8L IS II USM

tive. Note that with an APS-C camera and its 1.5X “crop” factor, you’ll need a focal length two-thirds of what you’d use on a full-frame camera to get the same angle of view (i.e., a 16mm lens on an APS-C camera shows the same angle of view as a 24mm lens on a full-frame camera). On a Micro Four Thirds camera, with its 2X focal-length factor, you’d need a lens half that of the one on the full-frame camera (12mm on the MFT camera to get the same angle of view as a 24mm lens on a full-frame camera). In terms of field of view, a 12-35mm lens on an MFT camera is equivalent to a 16-50mm on an APS-C camera or a 24-70mm on a full-frame camera.

Pro mid-range zooms generally have

### A Selection Of Pro Medium-Range Zoom Lenses

	Elements/ Groups	Max. MFD	Filter Magnif.	Size	Dimensions	Weight	Street Price	Mounts
<b>For Full-Frame DSLR (can also be used on APS-C)</b>								
Canon EF 24-70mm f/2.8L IS II USM	18/13	1.3 ft.	0.21X	82mm	3.5x4.4 in.	28.4 oz.	\$1,999	Ca
Nikon AF-S Nikkor 24-70mm f/2.8G ED	15/11	1.2 ft.	0.27X	77mm	3.3x5.2 in.	31.7 oz.	\$1,889	Ni
Sigma 24-70mm f/2.8 IF EX DG HSM	14/12	1.3 ft.	0.19X	82mm	3.5x3.7 in.	27.9 oz.	\$899	CaNiPeSiSo
Sony Vario-Sonnar T* 24-70mm f/2.8 ZA SSM	17/13	1.1 ft.	0.25X	77mm	3.3x4.4 in.	35.0 oz.	\$1,899	So
Tamron SP 24-70mm f/2.8 Di VC USD	17/12	1.3 ft.	0.20X	82mm	3.5x4.3 in.	29.1 oz.	\$1,299	CaNiSo
Tokina AT-X 24-70mm f/2.8 PRO FX	TBA							
Canon EF 24-70mm f/4L IS USM	15/12	1.3 ft.	0.21X	77mm	3.3x3.7 in.	21.0 oz.	\$999	Ca
Canon EF 24-105mm f/4L USM	18/13	1.5 ft.	0.23X	77mm	3.3x4.2 in.	23.6 oz.	\$1,149	Ca
Sigma 24-105mm f/4 DG (OS) HSM / A	19/14	1.5 ft.	0.22X	82mm	3.5x4.3 in.	31.2 oz.	\$899	CaNiSiSo
Nikon AF-S Nikkor 24-120mm f/4G ED VR	17/13	1.5 ft.	0.24X	77mm	3.3x4.1 in.	25.0 oz.	\$1,299	Ni
Sony 28-75mm f/2.8 SAM	16/14	1.3 ft.	0.22X	67mm	3.1x3.8 in.	20.0 oz.	\$899	So
Tamron SP 28-75mm f/2.8 XR Di	16/14	1.1 ft.	0.26X	67mm	2.9x3.9 in.	18.0 oz.	\$499	CaNiPeSo
<b>For APS-C DSLRs (1.5X focal-length factor)</b>								
Pentax DA* 16-50mm f/2.8 ED AL (IF) SDM	15/12	1.0 ft.	0.21X	77mm	3.3x3.9 in.	19.9 oz.	\$1,299	Pe
Sony DT 16-50mm f/2.8 SSM	16/13	1.0 ft.	0.20X	72mm	3.1x3.5 in.	20.4 oz.	\$749	So
Sigma 17-50mm f/2.8 EX DC (OS) HSM	17/13	0.9 ft.	0.20X	77mm	3.3x3.6 in.	19.9 oz.	\$519	CaNiPeSiSo
Tamron SP 17-50mm f/2.8 XR Di II VC	19/14	1.0 ft.	0.21X	72mm	3.1x3.7 in.	20.2 oz.	\$649	CaNi
Tamron SP 17-50mm f/2.8 XR Di II	16/13	0.9 ft.	0.22X	67mm	2.9x3.3 in.	15.2 oz.	\$499	CaNiPeSo
Canon EF-S 17-55mm f/2.8 IS USM	19/12	1.2 ft.	0.17X	77mm	3.3x4.4 in.	22.8 oz.	\$879	Ca
Nikon AF-S Zoom-Nikkor 17-55mm f/2.8G IF-ED	14/10	1.2 ft.	0.20X	77mm	3.4x4.4 in.	26.6 oz.	\$1,539	Ni
Pentax DA 17-70mm f/4 AL (IF) SDM	17/12	0.9 ft.	0.31X	67mm	3.0x3.7 in.	17.1 oz.	\$599	Pe
<b>For Full-Frame Mirrorless</b>								
Samsung NX 16-50mm f/2-2.8 ED OIS	18/12	1.0 ft.	0.19X	72mm	3.2x3.8 in.	21.1 oz.	\$1,149	NX
Sony Vario-Tessar T* FE 24-70mm f/4 ZA OSS	12/10	1.3 ft.	0.20X	67mm	2.9x3.8 in.	15.1 oz.	\$1,199	SoFE
Sony FE PZ 28-135mm f/4 G OSS		1.3 ft.	0.15X	95mm	4.0x6.5 in.	42.9 oz.	\$2,499	SoFE
<b>For APS-C Mirrorless</b>								
Fujifilm XF 16-55mm f/2.8 R LM WR	17/12	2.0 ft.	0.16X	77mm	3.3x4.2 in.	23.0 oz.	\$1,199	XF
Sony Vario-Tessar T* 16-70mm f/4 ZA OSS	16/12	1.2 ft.	0.23X	55mm	2.6x3.0 in.	10.9 oz.	\$999	SoE
Sony E PZ 18-105mm f/4 G OSS	16/12	1.5 ft.	0.11X	72mm	3.1x4.4 in.	15.1 oz.	\$599	SoE
<b>For Micro Four Thirds (2.0X focal-length factor)</b>								
Panasonic Lumix G X Vario 12-35mm f/2.8	14/9	0.8 ft.	0.17X	58mm	2.7x2.9 in.	10.8 oz.	\$899	MFT
Olympus M.Zuiko ED 12-40mm f/2.8 PRO	14/9	0.7 ft.	0.30X	62mm	2.8x3.3 in.	13.5 oz.	\$899	MFT

Mounts: Ca = Canon EF; FX = Fujifilm; Ni = Nikon F; NX = Samsung; Pe = Pentax K; Si = Sigma SA; So = Sony (and Konica Minolta) A; MFT = Micro Four Thirds

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<https://www.youtube.com/user/paulcbuff>



Summary of Recycle Tests from Video:

Flash Unit Models	Output Setting	Total WS	VLX™ Recycle	VML™ Recycle	ION Recycle
1 Einstein™ E640	Full Power	640 Ws	1.96 sec.	4.3 sec.	4.83 sec.
2 Einstein™ E640s	Full Power	1280 Ws	3.5 sec.	8.86 sec.	10.13 sec.
3 Einstein™ E640s	Full Power	1920 Ws	5.3 sec.	13.0 sec.	15.8 sec.
4 Einstein™ E640s	Full Power	2560 Ws	7.2 sec.	15.9 sec.	19.2 sec.
4 Einstein™ E640s	Half Power	1280 Ws	3.3 sec.		
1 AlienBees™ B1600	Full Power	640 Ws	2.0 sec.	4.13 sec.	4.4 sec.
2 AlienBees™ B1600s	Full Power	1280 Ws	5.27 sec.	14.1 sec.	14.4 sec.
2 AlienBees™ B800s	Full Power	1920 Ws			

Flash Unit Models	Output Setting	Total WS	POWERED BY VLX™		
			FPS	Time	# of Shots
1 Einstein™ E640	-4.4f	30 Ws	7fps	2.4 sec.	17 shots
4 Einstein™ E640s	-6f	40 Ws	7fps	2.33 sec.	17 shots



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## HI-TECH STUDIO

a fixed aperture, usually  $f/2.8$  or  $f/4$ . The variable-aperture zooms in this focal-length range are commonly consumer kit lenses—good, but not pro-level performers.

The fast zooms— $f/2.8$  and  $f/2$ —are better suited for dim-light work than slower  $f/4$  lenses. The fast lenses can also produce more limited depth of field to throw the background really out of focus and concentrate the viewer's attention on a specific portion of the subject. Generally, the bokeh—background and foreground blur—is more pleasant with the faster lenses, too.

On the other hand, the  $f/4$  zooms are compact, making them easier to carry, and the slower zooms cost less. If you don't need the benefits of the faster lens like low-light capability and extremely limited depth of field, you'll probably be better off with the slower option. And, by and large, the  $f/4$  zooms are sharper at  $f/4$  than the faster zooms are at  $f/2.8$ .

Note that the effective angle of view isn't the only thing that changes when

you switch camera sensor sizes. The depth of field produced by a given aperture also changes. A 12mm  $f/2.8$  lens on an MFT camera provides the field of view and depth of field of a 16mm  $f/4$  lens on an APS-C camera and a 24mm  $f/5.6$  on a full-frame camera when focused at the same distance, providing the same framing and perspective. That's why you should go with full frame if you like those extremely limited depth-of-field effects. To get the depth of field a 24mm lens provides at  $f/2.8$  on a full-frame camera with equivalent framing, you'd need a 12mm  $f/1.4$  lens on an MFT camera—and there aren't any of those. Of course, if extremely limited depth of field isn't important in your work, this won't be a consideration.

Zoom lenses offer several advantages over a set of prime lenses covering the same range of focal lengths. First, obviously, are cost and bulk. It costs less to buy one zoom than several primes, and it's easier to carry the one zoom around than a bag full of primes. The zoom also

allows you to quickly reframe with the twist of a wrist, rather than having to physically remove one lens and attach another each time you want to frame tighter or more loosely. And, of course, minimizing the number of lens changes helps keep your sensor free of dust.

The zoom also allows you to set intermediate focal lengths—if you have 24mm, 35mm, 50mm and 70mm prime lenses, but 43mm would be just perfect for the shot you have in mind, the zooms let you go there and the primes don't. Sure, you could just move in a bit with the 35mm prime or back up a bit with the 50mm, but that also changes perspective. Moving closer than the ideal distance for the shot you have in mind will expand perspective, not always a desired effect. And moving farther away will compress perspective, also not always desirable. The distances in this example aren't that big a deal, but the point is, a zoom lens gives you more compositional flexibility than a set of primes.

Of course, you can't beat a pro-level prime lens for sharpness. It's also easier



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to correct all the aberrations that can affect a lens at a single focal length than for a range of them. But today's pro zooms are very good optically, and many top professionals use them regularly.

### Special Elements

Mid-range zooms go from wide-angle to telephoto, and so incorporate a variety of special elements to optimize performance. Low-dispersion (and extra-low-dispersion) elements minimize chromatic aberrations. Aspherical elements minimize spherical aberrations and distortion. High-refractive-index elements minimize aberrations and make for more compact designs, as they bend light more sharply than conventional elements. The presence of these elements doesn't guarantee an excellent lens, but their absence probably indicates a non-excellent one.

### Canon

Canon offers three pro full-frame mid-range zooms and one APS-C one. The EF 24-70mm *f*/2.8L IS II USM is the flagship model, rugged and weather- and dust-sealed, with one Super UD and two UD elements to minimize chromatic aberrations and two types of aspherical elements to minimize spherical aberrations. If you don't need that *f*/2.8 maximum aperture, you can save 7.4 ounces and \$1,000 with the EF 24-70mm *f*/4L IS USM, which features a macro mode that takes you as close as 0.7X magnification. The EF 24-105mm *f*/4L USM gives you more focal length at the long end for those who like tighter headshots with still pleasing perspective (but lacks the IS stabilization). If you have an APS-C Canon DSLR, the EF-S 17-55mm *f*/2.8 IS USM gives you a pro-quality lens with focal lengths equivalent to 27-88mm on a full-frame camera.

### Nikon

Nikon's extensive lens lineup includes three pro mid-range zooms—two full-frame ones and a DX model designed for APS-C DSLRs. The flagship AF-S Nikkor 24-70mm *f*/2.8G ED features three ED elements and three aspherical elements to correct aberrations and

optimize image quality, even wide open at *f*/2.8, along with pro-grade dust and moisture resistance. If you don't need the *f*/2.8 maximum aperture, you can gain 35mm on the long end, plus vibration reduction (VR), with the AF-S Nikkor 24-120mm *f*/4G ED VR, and save \$600 in the bargain. For APS-C users, Nikon offers the AF-S DX Zoom-Nikkor 17-55mm *f*/2.8G IF-ED, featuring three ED and three aspherical elements like the 24-70mm

and providing focal lengths equivalent to 25.5-82.5mm on a full-frame camera.

### Olympus

Olympus offers the M.Zuiko ED 12-40mm *f*/2.8 PRO zoom for Micro Four Thirds cameras (equivalent in field of view to 24-80mm on a full-frame camera). It features two aspherical, ED and HR (High Refractive) elements each and one aspherical ED, DSA and HD

(Cont'd on page 79)

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# F A S H I O N LIGHTING

**During one week in February and one week in September, you can feel the earth tremble.** No, it's not an earthquake. This movement is caused by camera shutters and strobes catching the fads and flops of Fashion Week. Along with the live action on the runways and the paparazzi in the streets, high-end conceptual fashion photographers take this time to show off their freshest images and to contract new work. Compared with the

**36** | Digital Photo Pro [digitalphotopro.com](http://digitalphotopro.com)

**Top fashion professionals show how they work with light on the set**

industry's designers and models, photographers may have a more silent public voice, but it's their mastery of light technique that creates iconic fashion imagery that clearly shows each brand's advertising identity and each magazine's layout story. We caught up with Alessandro Dal Buoni, Jake Hicks, Lara Jade, Rossella Vanon and Rob Van Petten, who share their techniques to make your fashion shoots stand out.

**Rob Van Petten** shoots fashion advertising images with a futuristic flair. In Japan, at age 10, he borrowed his father's Nikon and never gave it back. He has been creating award-winning photographs for clients including Nikon, Gillette, Reebok, Ray-Ban and Procter & Gamble. Rob has written a regular column for *Nikon World Magazine*, and moderates the Nikon Digital Learning Center Flickr site and My Nikon World on Facebook. He was the Photography Program Director at Boston University Center for Digital Imaging Arts, and is the host of Big Shot Workshops and an avid photo educator. Known for his distinctive lighting, he has a very close relationship with Dynalite flash equipment and Rosco Labs.

### What do you like most about fashion photography?

Originally, I wanted to lead the romantic vagabond life of a photojournalist. Then, I discovered the romantic life of a fashion photographer where no one was shooting back at me. But, really, it's the wonderful world of acting out fantasies and pursuing beauty—rather than documenting reality.

### What's your top fashion photography tip?

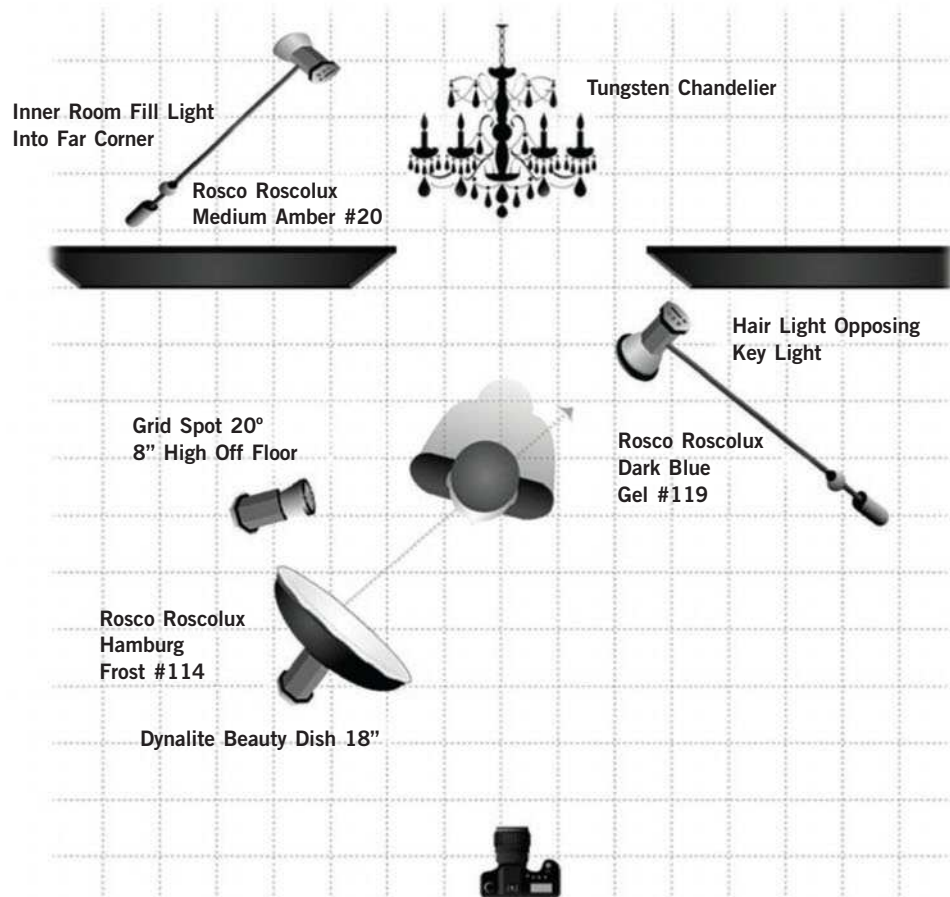
It's a collaborative effort. Lots of colossal egos collide. Learn to skillfully guide the creative energy of everyone on the crew. That makes a happy, productive shoot and the strongest images. Also, the job is to create an illusion. First, you set the stage, then you light the set. Finally, you give the model some scenario to act out. It's finding that believable moment that makes the shot work. If it's too much about the clothes or the lighting, it will look stiff. Keeping the models in motion makes it more believable.

### What's your favorite fashion lighting setup?

My lighting is always evolving to keep it fresh. It's somewhat challenging to pull off and makes the job intriguing for me, as well. I don't want to do the same thing over and over. The difference between doing it well and doing it great is in the subtle nuances. Keep refining. I use Dynalite flash gear. I use smaller-powered lights in local positions to light up the specific parts of the shot I want to address. I rarely use softboxes or big overall lights.

## Equipment

- 1 Nikon D800 and D810
- 2 AF-S Micro-Nikkor 105mm f/2.8G ED VR
- 3 Dynalite RoadMax 400s and 800s
- 4 A beauty dish and three heads, with grid spots, colored gels, diffusers and barndoors
- 5 Sometimes, I mix in a big 71-inch parabolic RiME LITE reflector if the shot requires more fill





## << Jake Hicks

jakehicksphotography.com

Having been a freelance photographer for over a decade, **Jake Hicks** has been fortunate to be involved with some varied and influential clients. He has shot a variety of hair campaigns and fashion editorials with a bright, bold style showcasing expressive models drenched in saturated colors. Jake's work involves dramatic, creative lighting techniques.

### What do you like most about fashion photography?

For me, photography has always been about the lighting, and I really like to get creative with it on a lot of my shoots. Portraiture and still-life photography are predominantly about accurately depicting the subject without getting in the way. Fashion photography is about emoting a feeling and an overall mood over just the physical objects of the fashion itself. Plus, I love working with models.

### What's your top fashion photography tip?

Fashion photography is an extremely competitive market. To become successful, you have three main options to pursue. You can either be extremely good at what you do, be incredibly cheap or be very different. If a client wants your look and style, then they're going to have to come to you and pay for it. There's no other way around it. That's a very powerful place to be because no matter how good you are at what you do, somebody will eventually be better, and no matter how cheap you are, I guarantee somebody

## Rossella Vanon >>

www.rvanonphotography.com  
www.rvanonworkshops.com

**Rossella Vanon** is a fashion and beauty photographer based in London. Born in a small town in the center of Italy, Rossella developed a love for art early on. After moving to London seven years ago, she turned photography into a full-time business and has since then worked for internationally renowned clients such as *Schön!*, *Nylon*, Ottoman Hands and NYX Cosmetics.

### What do you like most about fashion photography?

The creativity that I can put into planning the many small details that fashion shoots are made of. I love to see my vision come to life in an image. That feeling is what I'm in this industry for.

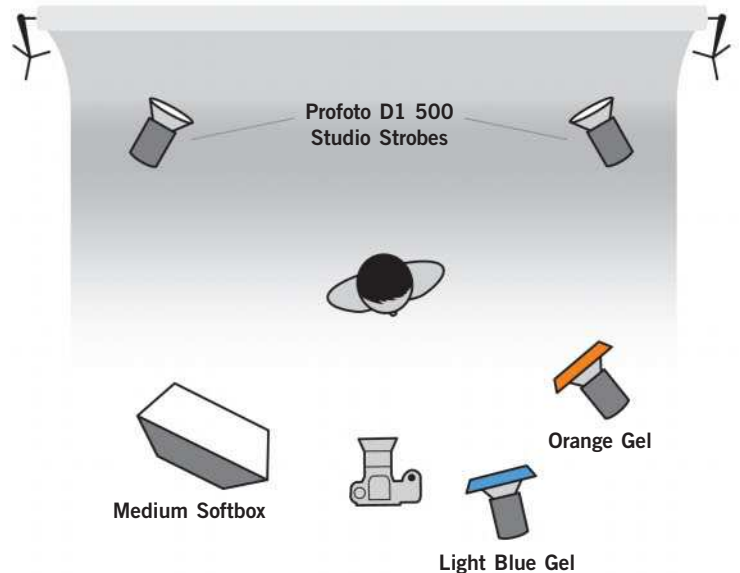
### What's your top fashion photography tip?

To keep working hard, even when it gets tough or it seems like things are not moving forward. Every shoot matters, and every mistake is a lesson learnt.

### What's your favorite fashion lighting setup?

There are several lighting setups that I love and use

depending on what mood I'm trying to convey in my images. I like re-creating natural light, playing with light projections, but most of all I enjoy playing with color light through the use of color gels. It's a big component of my work and one that I plan very carefully before every shoot. Wardrobe, skin color, makeup, hair and background all have so many shades to match and coordinate. Sometimes, it just works to add color in the light, too.



will always be cheaper, but nobody can truly copy your style.

### What's your favorite fashion lighting setup?

Something that has proved to be popular recently is my colored gel photography. This setup involves four lights and requires you to light the model from all four sides. The signature look here is clearly the implementation of the colored gels from the sides, but to get them to look soft like this requires you to point the lights away from the model and bounce them off white reflector board; hanging thick white sheets will create the same effect. As a rule, the larger the light source, the softer the light, so by bouncing the gels off these boards, you're in effect enlarging the light source. The color that falls back onto the model is far softer and nowhere near as harsh as pointing the light directly onto the model. The lighting is finished off with a beauty dish for a key light and a small softbox on the floor as a fill light. I love this lighting technique—once you've perfected it, it's very flexible. The two sidelights can have the colored gels swapped in and out quickly, and as long as you adhere to some basic color theory, you can shoot many different looks in a short space of time.



### Equipment

- 1 Nikon D600
- 2 Nikon 28-105mm *f*/3.5-4.5D Zoom-Nikkor
- 3 4 Bowens 500w Flash Heads
- 4 2 Bowens Maxilite reflectors (gels attached to the front of these)
- 5 1 Bowens 21-inch Silver Beauty Dish with diffusion sock
- 6 1 Bowens Lumiair 60x80cm softbox for fill light
- 7 2 large white sheets hung in front of the gelled lights
- 8 A pack of assorted colored gels from Rosco

### Equipment

- 1 Canon EOS 5D Mark II
- 2 Canon EF 24-70mm *f*/2.8L II
- 3 Canon EF 50mm *f*/1.4
- 4 Profoto D1 500 Studio Strobes:
  - Two equipped with standard reflectors and pointed toward the white background to make it appear completely white in picture
  - One matched with a medium softbox and positioned on the front of the model, on the camera's left-hand side
  - Two matched with standard reflectors and a light blue gel and an orange gel, and positioned on the front of the model





**Lara Jade**  
[www.larajade.com](http://www.larajade.com)  
[www.larajadeworkshops.com](http://www.larajadeworkshops.com)

**Lara Jade** is a fashion photographer who currently resides in New York City. She grew up in Staffordshire, England, where she discovered her interest in photography at an early age. She later moved to London to pursue fashion photography full

time before making New York her home in 2011. Lara has also been fortunate enough to receive a number of sponsorships and accolades, and has worked with Harrods, Nanette Lepore and most recently Broncolor, working on their Gen NEXT project.

### What do you like most about fashion photography?

The trends! Trends are the inspiration in fashion photography. I'm just as excited about trends and styling as I am photography. As a fashion photographer, you have to be fully immersed in the industry—following trends, designers, know who is who. I also enjoy that fashion shoots are a collaborative effort between a large team, as I enjoy working with other creatives.

### What's your top fashion photography tip?

The first three to five years of your career are going to be your defining years in which you'll build a foundation and support, and which will be invaluable later in your career. Focus on building your portfolio, finding your style and finding yourself. Surround yourself with the right people, and choose your creative team wisely—hair, makeup, stylists and other connections. Shoot as much personal work and test work as you can!

### What's your favorite fashion lighting setup?

I like to keep it simple. For me, fashion photography is about the idea. If you can successfully visualize your shoot first, then your lighting choice will be easy. I usually work with one large diffused key light and add a second or third light, for fill or for the background, if needed. On location, I use natural light, and use reflectors and large scrims to diffuse and shape the light. Soft diffused light is my go-to choice because it complements the style of my work. I often try to replicate natural light in the studio.

### Equipment

- 1 Canon EOS 5D Mark III
- 2 Canon EF 24-70mm f/2.8L II
- 3 1 Broncolor 5-foot Octabox
- 4 1 Broncolor Small Softbox (for leg fill)
- 5 2 White V-Flats for Fill

#### Shoot Credits

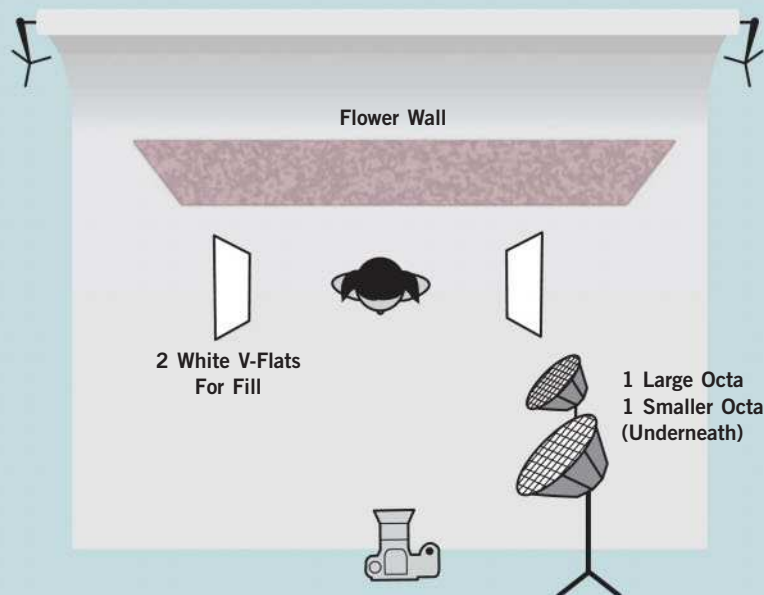
Client: *Harrods Magazine*

Model: Lisa Åkesson at Union Models

Styling: Poppy Rock

Hair: Rachelle Chapman

Makeup: Dani Guinsberg



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## Alessandro Dal Buoni

[www.alessandrodalbuoni.com](http://www.alessandrodalbuoni.com)

Originally from Milan, **Alessandro Dal Buoni** first became interested in photography after meeting fashion photographer Paolo Roversi in Paris and assisting Roversi on a shoot for *i-D* Magazine. Alessandro received a master's degree in photographic studies from the University of Westminster and has worked with clients such as Dior Homme, Kris Van Assche, Yohji Yamamoto, Galeries Lafayette and L'Officiel.

### What do you like most about fashion photography?

It allows and welcomes all sorts of cross contamination. It can incorporate absolutely anything, from landscape to portraiture and from snaps to conceptual art.

### What's your top fashion photography tip?

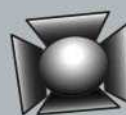
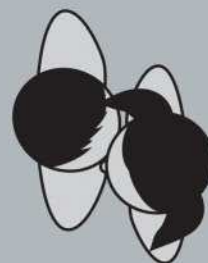
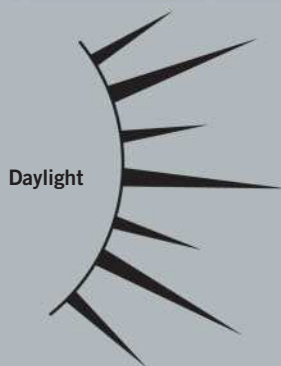
Explore, research, experiment.

### What's your favorite fashion lighting setup?

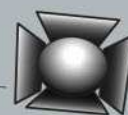
HMIs bouncing on the walls of a white daylight studio. It makes everything soft and pure. Here, I have two HMIs on each side bouncing on the ceiling. There's a polyboard on the floor in front of the camera and daylight coming from the left side.

### Equipment

- 1 Phase One P30 or P65+ digital back for Hasselblad cameras with 80mm, 120mm and 150mm, or Canon EOS 5D with 24-70mm and 100mm
- 2 ARRI 2.5k HMIs, sometimes mixed with daylight
- 3 Polyboards or California Sunbounce
- 4 Flags



ARRI 2.5k HMIs  
Lights Pointed At  
The Ceiling



California Sunbounce  
Reflector

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By William Sawalich >>> Photography By Zhang Jingna

# fashion

Zhang Jingna cultivates each of her photographs from the tiny seed of a creative concept into a stunning work of art

# in full bloom

Zhang Jingna's story is so peculiar, if it weren't true, you'd swear it were fiction. Born in Beijing and raised in Singapore, by age 14, Zhang was a national record holder in competitive shooting, a sport in which she would compete throughout her teens. As an art student at 18, she picked up her first camera just for fun. Two years later, in 2008, she left school and the air rifle behind to practice photography full time. Almost immediately, she began shooting editorials and advertisements for high-profile clients around the world, and two years ago, she relocated to the epicenter of fashion photography, New York City. But, now, barely eight years into a red-hot career, she's seriously considering leaving fashion photography behind.

"When I started taking pictures," she says, "photography was a hobby. Then, it was a form of escape when I was having troubles at home and with the air rifle. In the end, photography was a means to freedom. I was still in fashion school when I shot my first editorials and commercial work. The job enquiries were just starting to come in, and

the people I worked with were introducing me to one another, to meet with stylists and editors. I realized it was the right time in the market with a possible spot for a newcomer, so I decided to take a chance and left school to go for it. In my first year going pro, I did about 90 shoots, mostly editorials for small magazines. The sheer volume probably put my name out there.

"Half a year after I went pro," Zhang says, "I landed a major 12-page beauty editorial for *Harper's Bazaar Singapore*. Shooting for such a high-end, premium magazine and becoming a regular contributor definitely put my name in front of the right people. Social media wasn't that big back then, and future clients were definitely reading photo credits in magazines. Around the same time, I landed a campaign for Mercedes-Benz Taiwan with Ogilvy. They found my work online because at that time I was one of the very popular artists on the website DeviantArt. If you searched photography, a handful of top images would be mine. It brought a lot of traffic and exposure to my work. With those two milestones, I cemented a position in shooting luxury



# fashion in full bloom

Zhang Jingna's work is polished to perfection. She strives for that while shooting, then uses postprocessing software to iron out any remaining issues. Zhang explains, "My post work is pretty straightforward. The most signature thing is probably how much I am a perfectionist about things. I could say I'm done with an image, and then go on editing minute things for the next three hours or the next few days. I do most of my color processing in Lightroom, retouch in Photoshop, and then finally do some contrast and color adjustments in Photoshop, as well."



lifestyle work commercially and high-fashion beauty work editorially."

It's the fashion and beauty work for which Zhang is best known. Her aesthetic is romantic and painterly, featuring doll-like models who have been perfectly coiffed and meticulously styled, yet photographed without the slick veneer of some high-profile fashion work.

"It's the melancholy and beauty of the model," Zhang says of her style, "and, more technically, my lighting. In some ways, I'm always creating



the same character in variations for my work. She's graceful with a quiet, steady strength, also a little sad, and, most important, heartbreakingly beautiful. In terms of lighting, I generally avoid the glossy fashion looks and instead go for flatter, more subtle lighting that makes images more illustrative and painterly. The preference for these probably comes from my love for Japanese comics and classical art.

"I started to listen to Japanese visual rock when I was around 12," Zhang notes. "It inspired my interest in pho-

tographic images, costumes, hair and makeup. Before that, photography was a medium I never gave much consideration or attention to. Advertisements on the streets or in the papers were just things that were there. Visual rock was the first time I realized photography could be artistic and beautiful. I loved it so much, I became interested in wanting to create something similar."

Zhang's personal work maintains the refined, over-the-top aesthetic shared by both haute couture and Japanese visual *kei*. It's exemplified

by the images in her "Motherland Chronicles" series. These photographs have a heightened sense of fantasy, as well as a sculptural stillness and a painterly, portrait-like quality.

"'Motherland Chronicles' is a fantasy art book project that I'm working on with concept artist and illustrator Tobias Kwan," Zhang says. "It began when I had just moved to New York. Everything was very new, and I was restless about the lack of personal work I'd been doing in the last few years since my career took off. So we started the project

# fashion in full bloom

as a challenge to each other, to see who could keep up the longest in producing a new piece of work on a weekly basis. We placed a bet on it for incentive—the winner would receive a trip to Russia, thus the name ‘Motherland Chronicles.’ But within a few weeks, we began to find regular themes and styles in what we were doing, and over the course of the next year, we explored new characters, environments and techniques, and, personally, it was the first time I found so many opportunities to make tributes

to my favorite artists. We’ve wrapped up the pieces required for the book now, and we’re looking to launch a Kickstarter this year to produce the book ourselves.”

Zhang’s images, the personal and the commercial, are highly stylized and very conceptual. In each case, the concept is her own and serves as the foundation upon which everything else—whether a single image or an entire campaign—is constructed.

“It’s actually similar and at the same

Zhang’s attention to detail in retouching doesn’t push to the far side of reality. She says, “I can appreciate the perfect skin-and-pores retouching with dodge and burn, but if it’s done on my own work, I find it impossible to stomach. So, mostly, I just use the Healing Brush and Clone tool. If you want a person to look human, I think you have to work on it as a human in this more analog way, instead of digitizing it at every chance.”



time different in each situation,” Zhang says. “I generally come up with the concept of my shoots beginning with a single catalyst, something that inspires me in that moment. It’s a bit like watching a flower blooming from bud to full bloom: The idea begins as a little bulb, but it slowly grows, reveals and shapes itself as I think of additional components to complete the imagery. For example, with ‘Motherland Chronicles,’ I could be wanting to shoot underwater for an image. That would be the



## Zhang Jingna's Gear

**Canon** EOS-1DS Mark III

**Canon** EF 50mm *f*/1.8

**Canon** EF 70-200mm *f*/2.8L

**Canon** EF 16-35mm *f*/2.8L

**Canon** EF 85mm *f*/1.8L

**Profoto** D1 Air 500

**Elinchrom** 53-inch Octa

**Profoto** Beauty Dish Silver

**Profoto** Deep XL Umbrellas in  
White, Silver and Translucent

**Profoto** Strip Softboxes

**Savage Universal** seamless papers, muslin  
backdrops and collapsible backdrops

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to discover how leading  
fashion photographers work,  
what they use and how they  
stay ahead of the pack.

# fashion in full bloom

catalyst. From there, I'll think about the type of imagery I want to create, the character I want to craft. With those general ideas in mind, I go in search of the clothing that works, the model that's suitable, references for the hair and makeup for my team to understand my direction and the lighting possibilities, as well as any other additional props. With fashion assignments, on the other hand, it often works the same way in that I look for a catalyst, but because now what we're doing is selling products to an audience, I must craft my concept to fit within certain restrictions and expectations—I must sell the trend of the season's clothing for the shoot. And, while I want to showcase my style, it has to come with commercial accessibility to achieve its ultimate goal of reaching the consumer. Advertising sometimes means more creative freedom, since you don't have to work with current trends of fashion as you do for editorials.

"I separate my mind-set for personal and commissioned work," she adds. "If it's personal, I treat it as my playground and do whatever I want. If it's commercial or editorial, I do my best to achieve whatever the client requires in the best way possible. This way, everyone is happy, I don't get stifled creatively, and I get to showcase my skills in a commercial setting while getting paid to do something I'm good at and proud to share.

"Ultimately, it's fairly simple," Zhang says. "Beyond artistic expression and client requests, I just want to create something beautiful. That applies to all my work—fashion or otherwise. As a child, through beauty in art, my world was a little less dark. There would be this awe-inspiring feeling in my heart that I couldn't help but feel elated when I looked at beautiful art. It made me feel less alone and life more worth living. I want to do that for people, too."

Zhang was able to concentrate on



**Zhang is at home both in the studio and on location: "On location, you give more to chance and spontaneity, and visually it's easier to build depth. But in the studio, I can take my time and have full control over lighting, it doesn't change, and I can perfect a setup from 9 a.m. to 9 p.m."**

creating beautiful personal work after arriving in New York partly because her representation, with whom she had an exclusive contract, was unable to get her booked. In characteristic form, Zhang made the best of a bad situation and focused her creative energy on self-assignments. It marked the beginning of the realization that her long-term focus may not be fashion.

"When I first moved to New York," she says, "my then-agent couldn't find me any jobs—we weren't the right fit—and because it was an exclusive contract, they wouldn't let me find work on my own. So I started doing more personal work. During that time, I still had enquiries from back in Asia, but I started to realize how important

*(Cont'd on page 77)*



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# Haute Couture



With a combination of Renaissance style, Polaroid film, large-format cameras and digital scans, **Cathleen Naundorf** is one of the leading fashion photographers working today

By Mark Edward Harris >> Photography By Cathleen Naundorf



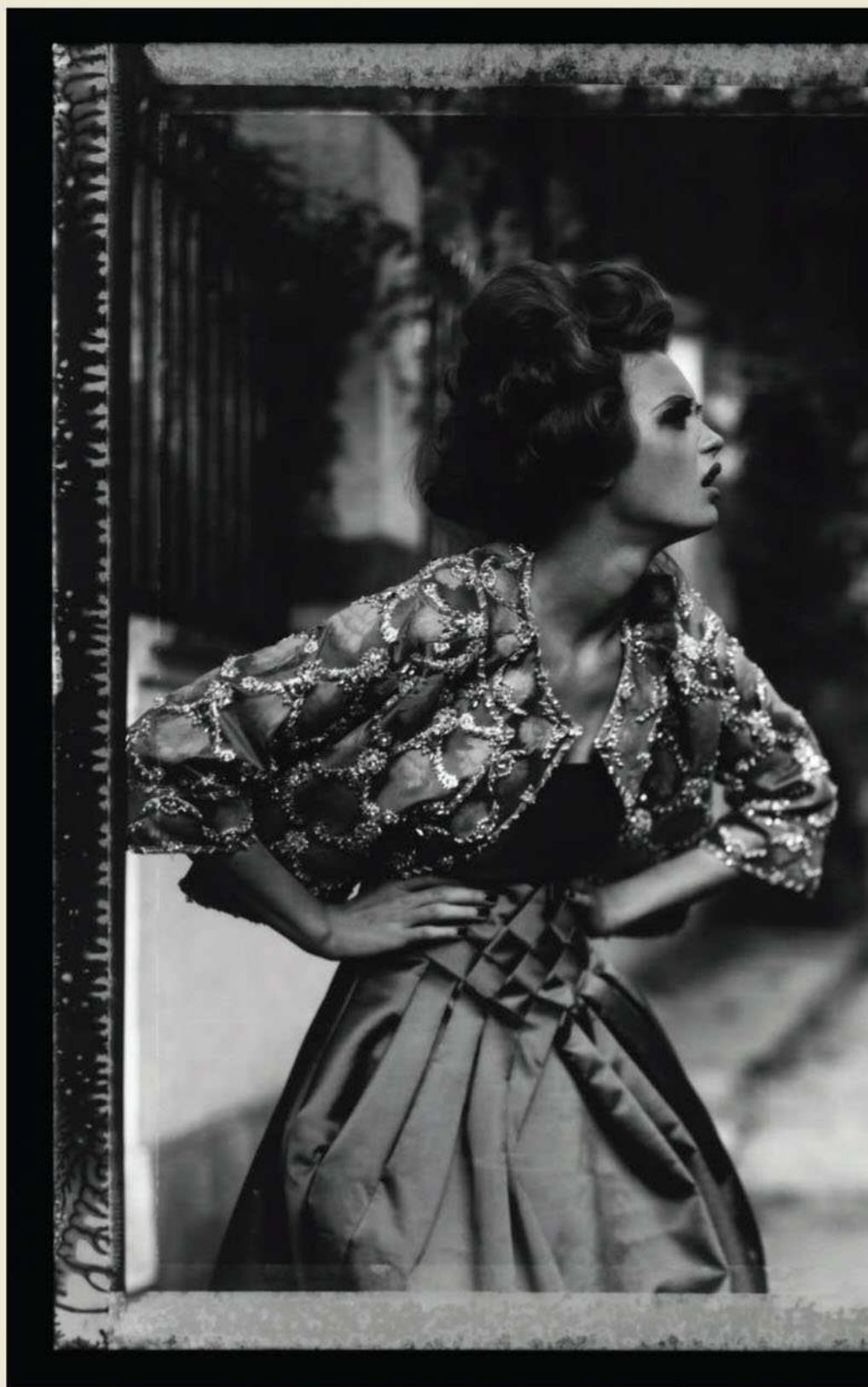
German-born, France-based Cathleen Naundorf paints with a camera. In fact, it was with a brush rather than a camera that she took her first forays into the world of art in the 1980s. The following decade put her on the photographic map as she traveled the world, camera in hand, specializing in reportage on indigenous peoples, ranging from the Yanomami tribe deep in the Amazon to the shamans of Yakutia, Siberia.

Inspired by her friendship with Horst P. Horst, Naundorf refocused her career on fashion. In 1997, she used her reportage background to document the controlled chaos of backstage Paris fashion shows for Condé Nast publications. Other periodicals of mode soon took notice.

With the new millennium came a new way of shooting—using large-format Deardorff and Plaubel cameras loaded with Polaroid and negative films. Her seven-year series “*Un Rêve de Mode*” used gowns pulled from haute couture archives of the leading European houses of fashion, including Chanel, Dior, Gaultier, Valentino and Lacroix. With the series, Naundorf created one of the first great bodies of fashion photography work in the 21st century. Her elaborate and cinematic productions grace the pages of *Haute Couture: The Polaroids of Cathleen Naundorf* (Prestel). An accompanying international touring exhibition firmly established her as one of the most sought-after fashion photographers working today.

**DPP:** How has your study of painting influenced your photographic eye?

**Cathleen Naundorf:** I learned a lot from paintings—the positioning of the models, the detailed preparations before the finalizations, the composition of colors, the framing and the reading of light. I still often go to galleries and museums to see the Italian and Flemish Renaissance paintings and drawings. It gives me an immense amount of inspiration for my photographic creations. When I traveled last year to Italy, I visited the Sistine Chapel and the museum of the Vatican. Michelangelo’s powerful



“With the new millennium came a new way of shooting—using

## >> More On The Web

See how more photographers are using both modern digital and legacy analog techniques and equipment to achieve their vision at [digitalphotopro.com](http://digitalphotopro.com).



Like many great fashion photographers, Cathleen Naundorf studied painting, as well as photography. Extensively published in the leading magazines, prior to becoming a full-time fashion photographer, Naundorf traveled globally, focusing on reportage and ethnic peoples. Favoring a large-format camera with Polaroid and print film over DSLRs, Naundorf's work is unique and refreshing in an industry dominated by flawless skin and hair. **OPENING SPREAD, LEFT:** My little darling. Dior Haute Couture Winter 2006 no. 30. Hôtel Plaza Athénée, Paris. Color print from original Polaroid. Model: Julia Oleynick, Nathalie Model Agency. **OPENING SPREAD, RIGHT:** 4pm in London. Philip Treacy design. **THIS SPREAD, LEFT:** The Crying Game. Dior.

large-format Deardorff and Plaubel cameras loaded with Polaroid and negative films.”

# Haute Couture

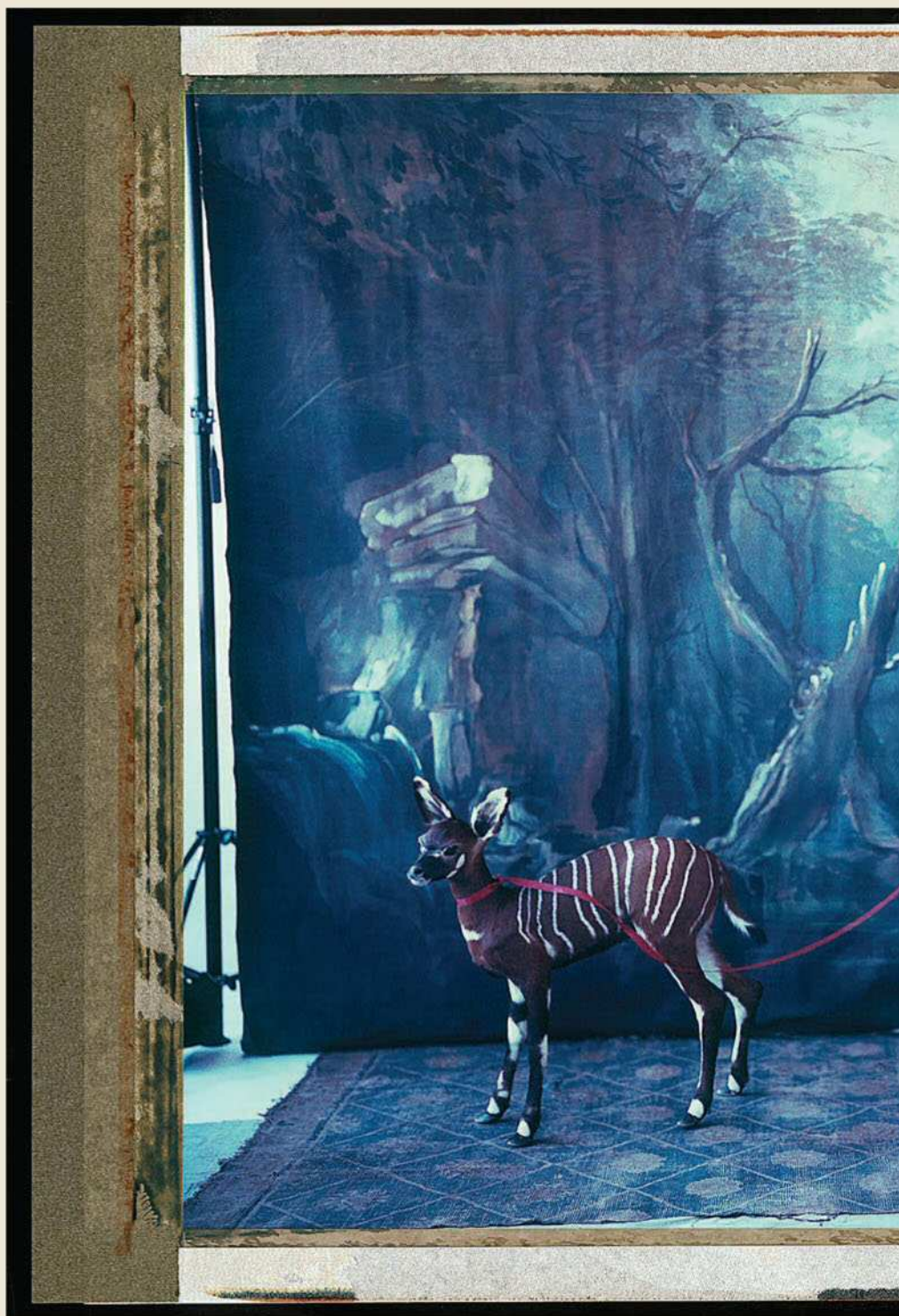
drawings, with their movements and colors, are timeless.

**DPP:** Since you first studied painting, why did you switch to photography for your artistic expression?

**Naundorf:** I was bored sitting alone in an atelier. I wanted to see the world and get out of a closed room. Photography gives you the opportunity to travel and a nice excuse to go to exotic places where most people never go. The doors are quite open when you have a camera in your hand.

**DPP:** How has your work in reportage influenced your fashion work?

**Naundorf:** After 10 years traveling around the world, I did some assignments as a backstage photographer during the fashion shows in Paris. I found it very exciting to see how they created beauty. I also found it interesting to meet and photograph the girls, which they called models during the fashion shows, the same girls I had met in places like Russia, Brazil and Norway on my travels. I knew their real lives. I discovered the interest human beings have for both glamour and different ethnicities. Combined,



**"I get inspired from life itself. I do a lot of drawings and**



storyboarding to prepare my team for the shoots.”

it’s a very interesting subject. Reality and illusion. So I slowly began to create in my fashion scenarios my own world of “glamour,” with a mix of romance, theatre, ethnic studies and humor. A painterly touch helps me to create poses and a sense of eternity.

**DPP:** Who are some of the artists and photographers who have influenced you?

**Naundorf:** Horst P. Horst is on the top of the list. He was a master of light and shadow. He had an absolutely incredible aesthetic and was a great lover of beauty. He was my mentor for many years. Irving Penn has been another endless source of inspiration. There’s so much depth to his photographs. Penn captured the eternity of the human being. There’s a simple message in his photographs of existence. Both Horst and Penn were masters of the portrait, still life, travel photography and fashion. Simply genius!

**DPP:** How do you develop your concepts for your photo scenarios?

**Naundorf:** I get inspired from life itself. I do a lot of drawings and storyboarding to prepare my team for the shoots. They’re based on intensive research, which goes into my storyboards, which often include archival photographs, text I’ve written or been inspired by, and my sketches for the planned shoot. This gets everyone in the right mood for the story. I’ve done travel diaries and storyboards for years. It’s one of my happiest times, expressing thoughts and developing ideas on paper, but I used to throw them away. It was a question of space. But my friends kept telling me that they’re pieces of art and that I need to keep them. So now I do, and maybe someday, we’ll publish them.

**DPP:** Do you paint your own backgrounds, or do you design them and have someone else paint them?

**Naundorf:** I used to paint my own backgrounds, but these days, I sketch out the ideas and somebody else paints them, except on occasion for some small ones. It’s a matter of time.

**DPP:** Since you’re shooting negative film and Polaroids, how do you deliver the finished images to your clients? Are you reworking the images

# Haute Couture

**PREVIOUS SPREAD:** L'arche de Noé VII. Philip Treacy design. Dior Haute Couture Summer 2012. Photographed in the Studio Bastille, Paris. Color print from original Polaroid. **PREVIOUS SPREAD, INSET:** In 2012, Naundorf's book *Haute Couture: The Polaroids of Cathleen Naundorf* was published by Prestel. **THIS PAGE, RIGHT:** The Evolution of Fashion.



in Photoshop, then delivering high-resolution files?

**Naundorf:** We scan the pictures and deliver them digitally, and usually with a printed proof so they can reproduce the images as close as possible to the original Polaroid or black-and-white prints. For the most part, we don't rework or retouch the original images.

**DPP:** What camera and lighting equipment are you working with?

**Naundorf:** I work with the old large-format Plaubel and Deardorff 4x5- and 8x10-inch cameras. My lighting depends on the location and mood I'm



going for, which is often quite different for each scenario. For artificial lighting, I use old Fresnel mid-century lamps. They're hard to get, but project magnificent light. And, then, there's sunlight. What's more beautiful than the light that keeps us alive?

DPP

*To see more of Cathleen Naundorf's photography, visit her website at [www.cathleennaundorf.com](http://www.cathleennaundorf.com). Her fine-art photography is represented by the Hamiltons Gallery (London), Fahey/Klein Gallery (Los Angeles) and Edwynn Houk Gallery (New York).*

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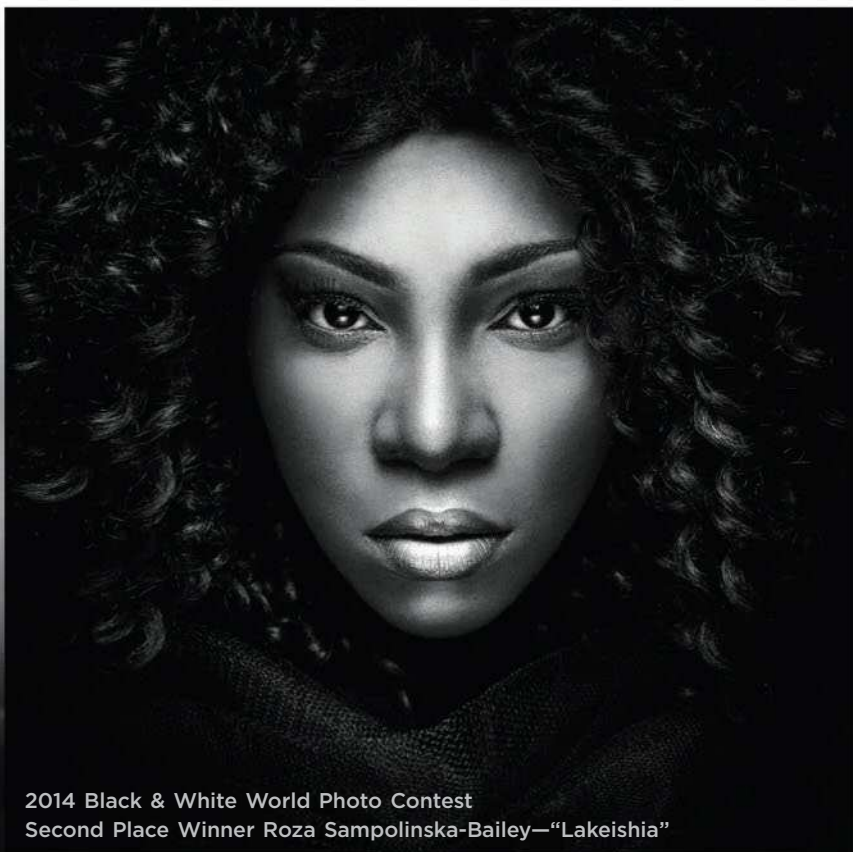
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# The Beautiful ILLUSION

Texan **Dixie Dixon** brings a romantic, dreamy approach to her fashion photography to create the beautiful illusion

By Kristan Ashworth >> Photography By Dixie Dixon

In an industry that's so heavily based on relationships and connecting with people, it's no wonder that photographer Dixie Dixon's career has skyrocketed in just the few years since she has been out of college. Her personality, charm and energy are infectious, and she goes out of her way to make everyone who she works with feel comfortable and at ease. The Texas native has spent the past few years traveling the world and creating images that not only capture a lifestyle, but often provide a much needed escape from reality. It's fitting that I caught up with Dixon, who's passionate about the beach, while she was enjoying the sun, surf and sand in Fort Myers, Fla., to learn about her exciting, nonstop journey.

Captivated by the imagery she found in books and magazines as a child, it was pretty natural for Dixon to develop an interest in photography, especially since her father and grandfather were both hobbyists. "My dad gave me my first camera, the Nikon FG, when I was first starting out and taught me how to use all the manual settings," she says.

Her passion for the craft grew while studying business at Texas Christian University in Fort Worth. "Photography helped me come out of my shell," she recalls. "I was a very shy person, so the camera became my sidekick. I'd go to all of these school events and photograph them."

Dixon was in the last class at TCU to use a





real darkroom before they converted to digital, allowing her to develop valuable skills that she has carried throughout her career. “I had such a passion for it,” she explains. “I was excited to have that opportunity because you can see your pictures come to life. I could spend seven hours at a time in the darkroom. It definitely helped teach me to shoot correctly in-camera.”

Photographing everything she could get her hands on while in college, Dixon assisted other photographers, and dabbled in portrait and wedding photography. She’d share her images to Facebook, which was in its early days at the time, but still proved to offer great networking opportunities and helped bring in more work for the budding photographer. She also had another talented family member whose skills proved important to her career. “My mom is extremely talented in marketing and branding, so she was a huge inspiration and help in my work and brand when I was getting started,” she says.

Dixon’s business steadily grew in college, but there was one experience that really helped her find direction





Mick Jagger once described rock 'n' roll as energy and three chords. Fashion photography might be similarly described as energy and three lenses. Dixie Dixon is part of the new generation of professional photographers. As a fashion photographer, she brings that essential element, energy, to her work. Mere enthusiasm won't get the job done, however, and in addition to energy, Dixon has the professionalism to do her job successfully from pitch to delivery.

as a photographer. "My junior year, I studied abroad with a world-renowned fashion photographer in London and Prague, and that's when I really fell in love with fashion photography."

With her newfound passion for fashion photography, Dixon found work shooting for modeling agencies, and that experience helped lead to another life-changing opportunity. She met a producer who was looking for a photographer for MAVTV's *Doheny Models*, a reality show about actress Jasmine Dustin's Beverly Hills agency of the same name. "The producer liked my work and had me come do some live shoots for the show, and they used the images in their advertising. The next week, I asked if they needed a photographer on any of their other shows, and he said they could use me in Miami to shoot for the [HDNet] show *Get Out*. I did all the photo shoots of the models on the beach. It was really fun. We went all over the world, from Miami to Puerto Rico, and shot in Toronto and Vancouver. The last episode was shot in Ibiza, Spain. The light there was beautiful. It was that really warm, glowy lighting, and I tend to go for warm-tone looks. I think that's where I started to discover my style as a photographer."

Dixon's style has been described as

having a romantic, dreamlike quality, but she says a photographer's style is always evolving. "I think it takes a few years for a photographer's style to start coming out. You don't have to go out and find it; it's something that will evolve and develop the more you shoot."

But one thing that has remained consistent is how she connects with her subjects. "I try to make images with soul," says Dixon. "Most fashion photography can be almost mannequin-like, where the models are just hangers. I try to capture the real, raw personality of my subjects in a very sensual, beautiful way. I really go to great lengths to create a connection with them by researching what they're into before the shoot. I'll look up their Facebook pages and see what kind of music they like, so I can have it playing on set. And when my subjects are in hair and makeup, I like to talk to them and get to know who they are because the more that I can put them at ease, the more I can bring out that confidence within them. I really think that confidence is one of the most beautiful things, and if I can build their confidence when I'm shooting, they'll be able to really express their personality."

That connection also comes from the positive energy Dixon brings to set to help create an experience that not only



puts her subjects at ease, but ultimately helps bring clients back. "I'm all about energy," she says. "If there's good energy on set, and you get a good connection with your subject and they're comfortable and into it, you can see it in their eyes. I give a lot of feedback and compliments, and that helps create a mood and atmosphere that people can read when they look at the pictures. I try to get to know not only the subjects, but the clients, as well. I'm always asking

them questions. You have all of these different personalities on set and everyone is a little bit stressed because you have a certain amount of time to create the images. So as a photographer, you have to be a multitasker. You have to be able to connect with everyone on set while also remaining focused on what you're creating."

Now, with a diverse range of clients in her portfolio including Florsheim Shoes, MAC Group, Billy Jealousy,



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Nha Khanh, Inside Edition, CBS, Profoto and Angelberry Organics, Dixon's list of accomplishments continues to grow: She's a G-Technology G-Team Ambassador and is one of only 19 Nikon Ambassadors of the United States. "I've been a Nikon shooter my whole life," she says, "so it has been neat to be able to work with the companies whose products I already use on a regular basis."

Dixon already enjoyed attending trade shows and learning from other photographers who spoke at the events, and Nikon was instrumental in getting Dixon in front of a crowd and on the way to improving her public-speaking skills. "Nikon asked me to

### Dixie Dixon's Gear

#### Nikon D810

AF-S **Nikkor** 35mm f/1.4G

AF-S **Nikkor** 58mm f/1.4G

AF-S **Nikkor** 85mm f/1.4G

AF **Nikkor** 180mm f/2.8D IF-ED

AF-S VR **Micro-Nikkor** 105mm f/2.8G IF-ED

**Profoto** B1 flash

**Lexar** memory cards

**G-Technology** G-DOCK

**Black River Imaging** for printing

**Graphistudio** for portfolio books

**X-Rite** for color management

Still in her 20s, Dixon was one of the last students to learn film and darkroom skills when she was in college. Like learning multiplication tables in an era of pocket calculators, having an understanding of how images are made on film and in a darkroom gives one a solid foundation as one branches out in the limitless expanse of digital technology. Dixon's photography displays that solid technical foundation in her polished and sensuous images.



speak at PhotoPlus and talk about my work. I'm really passionate about talking about lighting and connecting with your subjects. I wouldn't say I was that great at it when I started," she says with a laugh, "but it's something you kind of learn as you go. It definitely has been getting me out of my comfort zone. I really enjoy it now."

Dixon has said that she's inspired by the beautiful illusion of fashion and commercial photography, an interesting choice of words, considering she works in an industry that so often, and controversially, tries to pass off overly touched-up, slimmed-down or enhanced photographs as the real thing. But Dixon's approach is more subtle, purposeful and tactful. "I like creating that illusion, that dream," she says. "Fashion photography should be

looked at more as an art form than reality. The biggest problem is when people think it's real. That can create those skewed views on photography and the use of Photoshop. It's really meant to be art."

With a fresh vision and a memorable name that helps her stand out ("Dixie" is a nickname from the sixth grade that stuck), Dixon's work is a reflection of her infectious energy and boundless creativity. "I get lost in fashion photog-

raphy," she says. "I've always had this crazy, wild imagination, and I really like to bring that out in my pictures." DPP

You can see more of Dixie Dixon's photography at [www.dixiedixon.com](http://www.dixiedixon.com).

#### >> More On The Web

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# Bring Hollywood Home

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Scott Nathan – Award Winning Photographer & Director

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Most professional photographers make their first forays into motion by leveraging their still photography equipment. Everything, from the motion-capable DSLR to the usual collection of lenses to the tripod and head, was ported from still capture to motion capture. Any prolonged work in shooting motion requires some additional gear.



### Continuous Lights

Obviously, strobe lighting doesn't work for video. There are a ton of options for continuous lights for rental and plenty of reasonably priced options for purchase. Lights like the K 5600 Joker-Bug models have proven popular for both still and motion projects. Fresnels are among the most common types of light on any movie set because of their ability to put out bright, collimated illumination. Some lighting companies offer dedicated Fresnels, and others make Fresnels that are modifiers designed to be attached to different light heads.

# Moving To MOT

Key gear to take your movie work from static to dynamic



### Dedicated 4K Motion Cameras

Like a lot of photographers, you may have cut your teeth with a Canon EOS 5D Mark II or similar camera. Over time, however, client needs have evolved, and the buzzword in motion now is 4K. There are mirrorless cameras that can output 4K, or you can make the leap to a camera like the RED SCARLET or EPIC DRAGON. The RED cameras are true still + motion cameras that can capture full 4K (and higher)-resolution footage. You actually can pull a frame from the motion stream to use as a still shot, and it's full resolution and there's no line skipping. RED cameras can take a variety of lenses. They're high-end pieces of gear for high-end work.

### Sliders

Adding a little movement as you're shooting static scenes makes the footage much more dynamic. Like the often cited Ken Burns effect, the shot feels like it has a lot of movement even though it's basically a still. A simple manual slider is all you need to pull off such an effect with some practice. At the other end of the spectrum, you can go for a fully programmable, motorized unit that allows you to control camera movement in several axes at once with variable rates of movement like the Kessler CineDrive.





## Going Handheld

There are all sorts of tools for going handheld with motion. Rigs like the models from Redrock Micro are highly modular and let you put the camera into a variety of positions. To keep the camera steady as you move with it, a counterweighted rig like those made by Steadicam and Glidecam are excellent options with a lightweight camera like your regular mirrorless or DSLR body.



# ION



## Lenses For Motion

Your regular still photography lenses can do a great job, up to a point. One of the biggest advantages of true movie lenses is that, in a given series, all of the models will have the same size lens barrels and controls will be in the same place so you can swap lenses and not have to make any adjustments for focus pulling, etc. The Zeiss CP.2 primes, Rokinon and Samyang cine lenses, as well as the Tokina Cinema ATX zooms are good examples of popular motion-capture models.

## Drones

Aerial drones are moving from the RC hobby arena to the photography and videography mainstream. Commercial and movie productions have been using large octocopters to carry small movie cameras for years. Now much smaller quadcopters like the DJI Phantom 2 Vision+ and 3D Robotics IRIS+ place HD cameras on drones that can be carried in a backpack. The DJI Inspire 1 was introduced in late 2014 and shown at CES where its integrated 4K camera created a considerable buzz. Aerial videography remains complex and it takes a lot of practice, but these well-integrated solutions make it possible to master their use without having to solder circuit boards and control wires. The view from above is fantastic, but where drones can really create some amazing footage is by using them for tracking shots. See Philip Bloom's short film *Koh Yao Noi* for a great example of this kind of shot. Find it on his site, [philipbloom.net](http://philipbloom.net), or go to Vimeo and search for it there. DPP



# FULL-FRAME ROUNDUP



For most pros, the full-frame format is the tool of choice for the bulk of their work. The range of what's available has grown, and we break down some of the new options.

**A few years ago, it looked like the major camera manufacturers were on the verge of all but completely eliminating full-frame products.** That has changed, and today there are more full-frame options available than ever before. For pros, especially fashion-oriented pros, a full-frame DSLR is the tool of choice. Here's a look at what's available today.

## Why Full-Frame?

Full-frame DSLRs are bigger and heavier than smaller-format cameras,

but that full-frame sensor does make a difference in terms of image quality. That's largely because a bigger sensor can collect more light, and more light means less noise and thus better image quality. Today's top pro DSLRs are all full-frame models, so that's the way to go if you're into action or low-light work, not just low-ISO image quality.

If you shoot at a specific shutter speed and *f*-stop in a given amount of light, the exposure will be the same for any format; the same number of photons per

square millimeter will reach the sensor. But the full-frame sensor is larger than smaller sensors, so the full-frame sensor will collect more total (total light = photon/unit area times total sensor area). And more total light translates to a better signal-to-noise ratio because noise increases at the square root of the photon count: If 100 photons reach the sensor, there will be 10 photons of noise, for a photonic signal-to-noise ratio of 10:1. If 10,000 photons reach the sensor, there will be 100 photons of noise, for a pho-

tonic signal-to-noise ratio of 100:1. Of course, there are other sources of noise, but photonic noise (which is carried by the light itself and thus can't be reduced by technology) is the major one for normal photography. More light = more image quality. (This, by the way, is why high-ISO shots are noisier: When you shoot at a higher ISO, you use a faster shutter speed and/or a smaller aperture, which reduces the amount of light.)

Of course, there are some things to keep in mind here. If you shoot at 1/500 at  $f/2$  with a full-frame camera and 1/500 at  $f/2$  with a Micro Four Thirds camera, the same amount of light will fall on each square millimeter of sensor area. Since the full-frame sensor is almost 4X the size of the M43 sensor, nearly 4X as much light will fall on it. But if you use the same focal length on each camera, the full-frame camera will produce a much wider angle of view because the larger sensor "sees" more of the image projected by the lens. If you want to produce the same framing with each camera, you'll have to use a lens half as long with the smaller format: 12mm on the M43 camera, if you're using 24mm on the full-frame camera. Now you have the same framing, but the M43 image will have more depth of field because that depends, in part, on the size of the aperture, and  $f/2$  on a 12mm lens equals 6mm, much smaller than  $f/2$  on a 24mm lens (12mm). If you want the same depth of field, as well as the same framing, with both cameras, you'll need to stop the 24mm lens on the full-frame camera down to  $f/4$ . If you then want to maintain the same exposure, you'll have to slow the shutter speed on the full-frame camera two steps, in this case, to 1/125, so you get the same image brightness at  $f/4$ . That's fine if your subject isn't moving, but may not work with an action subject. Of course, you could instead increase the ISO setting on the full-frame camera two settings and shoot at 1/500 at  $f/4$ , but then you're reducing the amount of light reaching the sensor, so the image will be noisier.

This works the other way, too. If you want the limited depth of field produced

by a 24mm  $f/2.8$  lens wide open on a full-frame camera, you'd have to open the M43 12mm lens to  $f/1.4$ —but there are no 12mm  $f/1.4$  lenses for M43 cameras.

For a very thorough explanation of equivalences, go to [www.josephjamesphotography.com/equivalence](http://www.josephjamesphotography.com/equivalence). In practice, if you're shooting with a given format, you're setting everything to get the shot you want with that camera, not thinking about what you'd have to do to get an equivalent image with another format. A full-frame camera at a given shutter speed and  $f$ -stop should produce better image quality (better signal-to-noise ratio, technology generation being equal) than a smaller format at the same shutter speed and  $f$ -stop in the same light (but with less depth of field if you frame the image the same from the same distance).

Full-frame sensors perform better in low light than smaller sensors, in large part because they can collect more light at a given shutter speed and  $f$ -stop. In DxOMark.com's sensor ratings, the top 29 scorers in low-light ISO performance are full-frame ones. The highest-scoring APS-C sensor ranks 30th, the best medium-format camera, 37th (and that through pixel binning, which drops its 40-megapixel sensor to 10 megapixels), and the best Micro Four Thirds sensor, 78th. Note that DxOMark.com hasn't yet tested the medium-format cameras using the new 50-megapixel Sony CMOS sensor, which should fare far better than the CCD sensors in low-light performance. In overall score, counting color bit depth and dynamic range, as well as low-light/high-ISO performance, full-frame cameras occupy the top 14 spots and 18 of the top 21. The other three are 40- to 80-megapixel medium-format cameras.

### Pixel Count

Full-frame DSLRs are available in resolutions from 12.4 to 36.3 megapixels. More megapixels mean the ability to record finer detail and make larger prints—assuming camera shake, poor focus and lens problems don't destroy sharpness. More megapixels also mean larger files, which, in turn, require

higher-capacity memory cards and archiving drives, and more powerful computers. Smaller pixels are less efficient than larger ones, but you have a lot more of them, so that sort of balances out. The four 36-megapixel full-frame cameras (the highest pixel count currently available in full-frame) hold spots 1 through 4 in DxOMark.com's overall sensor ratings, followed by seven 24-megapixel full-frame sensors and an 80-megapixel medium-format CCD. The current 12-megapixel full-frame sensor rated 19th overall, but 1st in low-light/high-ISO performance.

Bottom line: All of today's full-frame DSLRs (and mirrorless cameras—see the sidebar) are excellent choices in terms of image quality, whatever and wherever you shoot. And, of course, DSLRs are extremely versatile cameras, able to handle everything from studio still lifes to high-speed action, small enough to work almost anywhere, with a wide range of lenses from fish-eye to super-telephoto and good video capabilities. DSLRs are also good choices when you want to do selective-focus shots, or video, with minimal depth of field. If you do a wide range of types of photography, any of the full-frame DSLRs will serve you well. If you specialize in low-light or fast action, one of the under-20-megapixel ones would be the best choice. If you make huge prints or crop a lot or specialize in subjects with fine detail, one of the 36-megapixel cameras would be best.

Note that the full-frame DSLRs also have bigger, brighter viewfinders than smaller-format DSLRs, making it easier to compose images, track moving subjects and focus manually.

### Video

All of today's full-frame DSLRs can shoot full HD (1920x1080) video except Nikon's retro Df model. There are even two medium-format digital cameras that can do video (the Leica S Typ 007 and Pentax 645Z). There's a lot to be said about video and sensor sizes. The very short and oversimplified story is that the big full-frame sensor delivers a cinema-like shallow depth of field you can't get with a small-sensor video camera.

## Full-Frame Mirrorless

Full-frame cameras are also available in mirrorless form in Sony's A7 series. The A7 II features a version of the Sony 24.3-megapixel Exmor sensor found in the A99, the A7R has a version of the very high-resolution Sony 36.3-megapixel sensor, and the A7S has a 12.4-megapixel Exmor sensor that delivers the best low-light ISO performance ever tested by DxOMark.com. The major advantages of the A7 series over the A99 are much smaller size, no light lost to the TMT mirror and, of course, the high-res and low-light sensors of the A7R and A7S. The major drawbacks are far fewer native focal lengths and slower AF performance. These cameras can produce outstanding image quality, but they may not be the best choices for action specialists.

Sony also offers the RX1 and RX1R full-frame compacts with a 24.3-megapixel CMOS sensor, differing only in that the RX1R has no AA filter. Featuring a built-in Zeiss T\* 35mm *f*/2 lens and a built-in flash, the cameras measure a minimal 4.5x2.6x2.7 inches and weigh 17 ounces including battery and memory card—remarkable for full-frame cameras. They do carry a full-frame price: \$2,799.



## | Canon EOS-1D X |

Canon produced two versions of its flagship EOS-1 series pro DSLRs until mid-2012, one with an APS-H (1.3X crop) sensor and a high frame rate, and a high-megapixel full-frame model with even better image quality. The EOS-1D X marked the merging of the 1-series into a single model. The 18.1-megapixel, full-frame EOS-1D X can shoot full-res JPEGs at up to 14 fps (with the mirror locked up and no AF) and full-res RAW (and JPEG) images at 12 fps with phase-detection AF for each frame—faster than the 16-megapixel APS-H EOS-1D Mark IV action camera it replaced.

Although 18 megapixels was somewhat less than many had anticipated for an EOS-1DS Mark III (21.1 megapixels) successor, it allows for the fantastic frame rate, as well as excellent high-ISO performance (normal ISO range is 100-51,200, expandable to 204,800), and is two megapixels more than Nikon's flagship D4S. Also helping make the EOS-1D X Canon's speed champ are two new-generation DIGIC 5+ processors, each 17X more powerful than the DIGIC 4s used in the previous 1-series generation.

The AF system features 61 points covering more of the image frame than its predecessor. Forty-one of the points are cross-types with lenses of *f*/4 and faster, 20 are cross-types with lenses of *f*/5.6 or faster (none were cross-types at *f*/5.6 with previous 1-series cameras). A firmware upgrade added *f*/8 AF capability—handy when using a teleconverter. The new system is also faster and more accurate than its predecessor, with a new AI Servo II tracking algorithm. The metering system features a 100,000-pixel RGB sensor and its own dedicated DIGIC 4 processor. The rugged pro body has 76 gaskets and seals to keep out moisture and dust, and a shutter rated at 400,000 cycles. A new quad-action mirror design reduces vibration and speeds operation (mirror blackout is just 60 ms).



## | Canon EOS 5D Mark III |

The EOS 5D Mark II started the shoot-pro-video-with-a-DSLR phenomenon, and the Mark III improves on its predecessor in many ways. At 22.3 megapixels, the 5D Mark III is Canon's highest-resolution DSLR. Its DIGIC 5+ is 17X more powerful than the DIGIC 4 in the 5D Mark II, which permits use of new noise-reduction algorithms, an improved video codec and even on-the-fly chromatic aberration correction. Normal ISO range is 100-25,600, expandable to 50-102,400. The 5D Mark III can shoot its 22.3-megapixel files at 6 fps, and sports the same high-density reticular AF system as the flagship EOS-1D X, with 61 AF points, a new AI Servo III AF tracking algorithm and the ability to work in light levels as dim as EV -2.

Like the EOS-1D X, the 5D Mark III offers 1920x1080p full HD video at 30, 25 and 24 fps, 1280x720p HD video at 60 and 50 fps, and 640x480 SD at 30 and 25 fps. Pro video features include All-I (for easy editing) or IPB (for smaller files) compression, Rec Run and Free Run timecoding, recording up to 29 minutes, 59 seconds at a clip (with automatic splitting of longer files), better image quality and audio volume adjustable during recording.

While not quite as rugged as the all-out pro EOS-1D X, the 5D Mark III is more durable than the 5D Mark II, with better weather sealing and a locking mode dial. The shutter is rated at 150,000 cycles. The 5D Mark III features the same 3.2-inch, 1,040,000-dot Clear View II LCD monitor as the EOS-1D X, great for live-view and video shooting (although it doesn't tilt or swivel). There are slots for CompactFlash and SD/SDHC/SDXC memory cards.

## | Canon EOS 6D |

Canon's entry-level full-frame DSLR, the EOS 6D features good image quality and performance, built-in WiFi and GPS, and a very attractive price. The 20.2-megapixel 35.8x23.9mm CMOS sensor delivers 14-bit images measuring 5472x3648 pixels. DIGIC 5+ processing provides shooting at up to 4.5 fps and a normal ISO range of 100-25,600, expandable to 50-102,400. The 11-point AF system features a center cross-type point that works in light down to EV -3.

The big pentaprism viewfinder shows 97% of the actual image area, while the 3.0-inch, 1040K-dot LCD monitor provides easy live viewing. The compact (for a full-frame DSLR) body measures 5.7x4.4x2.8 inches and weighs 24.0 ounces. There's no built-in flash, but there's a hot-shoe for dedicated E-TTL II Speedlites.

A built-in GPS receiver records latitude, longitude, elevation and Coordinated Universal Time as EXIF data for easy geotagging. The EOS 6D is also one of the few full-frame DSLRs to offer built-in WiFi capability.

Video capabilities include 1080p at 30 and 24 fps (25 fps PAL) and 720p at 60 fps (50 fps PAL), plus 480p at 30 fps (25 PAL), all in H.264/MPEG-4 AVC High Profile (.MOV) form. Choose between All-I (better for editing) or IPB (more minutes per MB) compression, and Rec Run (during shooting only) or Free Run (full-time) embedded timecoding. Sound is mono via a built-in microphone or stereo via an optional external mic.

Like all full-frame EOS cameras, the 6D can use all Canon EF lenses, which currently range from an 8-15mm fish-eye zoom and a 14mm superwide-angle to an 800mm supertelephoto (and it can't use EF-S lenses, which were designed specifically for the smaller APS-C sensors and would vignette if used on a full-frame camera).



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## | Nikon D4S |

Nikon's flagship pro DSLR, the D4S improves on its D4 predecessor in a number of ways. It's the quickest Nikon DSLR (11 fps at full-res with continuous AF, up from 10 fps in the D4), with even better high-ISO image quality (normal ISO range is 100-25,600, expandable to 50-409,600, both a stop better than the D4 and Df), thanks to a newly developed (but still 16.2-megapixel) FX-format (full-frame) CMOS sensor and EXPEED 4 processing. Low-ISO image quality has also been improved. The EXPEED 4 processing (vs. EXPEED 3 in the D4) combines with the improved sensor to make possible 1080 full HD video at 60p (up from 30p in the D4), with simultaneous writing to memory card and uncompressed output to external recorder via HDMI, when desired. The EXPEED 4 and a new EN-EL 18a battery also increase the shots per charge from 2600 to 3020 (per CIPA standard). While the basic AF system is the same as the D4's (51 points, works down to EV -2 and with lens/converter combos as slow as f/8), recalibrated AF algorithms and a new Group Area AF mode improve AF performance on moving subjects.

Retained are fine D4 features such as pro-grade construction and moisture sealing, a shutter tested to 400,000 cycles, a 3.2-inch 921K-dot LCD monitor and a bright pentaprism eye-level viewfinder that shows 100% of the actual image area. Subtle changes include grip modifications for increased comfort, improved ergonomics and shorter viewfinder blackout time for easier subject tracking.



# FULL-FRAME ROUNDUP

## Medium Format

The main advantage full-frame DSLRs offer over smaller formats is better image quality. Medium-format digital cameras have much larger sensors and offer much better image quality at base ISO (usually around 50). At ISO 400, though, full-frame DSLRs take over because the CCD sensors used in medium-format cameras are optimized for low-ISO work. This is changing, though, with the recent introduction of Sony's first medium-format sensor, a 44x33mm CMOS unit that should deliver much better high-ISO performance, along with excellent low-ISO image quality. Hasselblad and Phase One cameras and backs using this sensor have ISO ranges of 100-6400, while Pentax states a range out to ISO 204,800. Hasselblad's H5D-50c camera and CFV 50c back, Pentax's 645Z camera and Phase One's IQ250 back all feature versions of this 50-megapixel CMOS sensor, tweaked to their own tastes. Leica's new S Typ 007 features a 37.5-megapixel 45x30mm CMOS sensor with an ISO range of 200-6400.

Medium-format digital cameras are slower, bulkier and more costly than full-frame DSLRs. But speed doesn't matter for the types of work medium-format shooters do (studio, portrait, landscape), and cost is coming down. Pentax's first medium-format digital camera, the 645D, now sells for under \$4,500, and the 645Z with 50-megapixel CMOS sensor sells for around \$8,500 compared to the \$40,000 you can spend for a high-end 80-megapixel CCD medium-format camera and back.



## | Nikon D810 |

Nikon's third 36.3-megapixel full-frame DSLR, the D810 offers a number of improvements over its D800 and D800E predecessors. It completely does away with the AA filter (the D800E merely deactivated it), for even sharper image potential. It can shoot faster (5 fps at full resolution, 6 fps in 1.2X crop mode (25 megapixels)

or DX mode (15.4 megapixels). Buffer size has been increased for longer bursts. New AF algorithms provide more precise autofocus, even in dim light. The 51-point AF system includes 15 cross-type sensors and 11 cross-types that function at  $f/8$ —ideal when using a teleconverter. There's a new Group Area AF mode that's great for action. The D810's EXPEED 4 processing is 30% faster than its predecessors' EXPEED 3, allowing for 1080 video at 60p and improved battery life (CIPA-rated 1200 vs. 900 shots per charge). A new electronic front curtain shutter minimizes vibrations to enhance sharpness. ISO range has increased at both ends (now 64-12,800, was 100-6400). You can now make up to 9,999 images in time-lapse/interval timer mode (vs. 99). Metering is Nikon's 91,000-pixel 3D Color Matrix Metering III (II in the earlier models) to optimize exposure, AF auto white balance, i-TTL flash and subject tracking, all in a solid pro body.

The D810 can use more than 80 Nikkor lenses, including 65 FX-format (full-frame) ones. As with other Nikon full-frame cameras, if you attach a DX (APS-C) lens, the camera automatically crops to DX format to avoid image cutoff. FX lenses currently range from a 14mm  $f/2.8$  superwide-angle to an 800mm  $f/5.6$  supertelephoto, including true 1:1 macro lenses, lots of zooms, and wide, normal and short telephoto PC-E (tilt-shift) lenses.

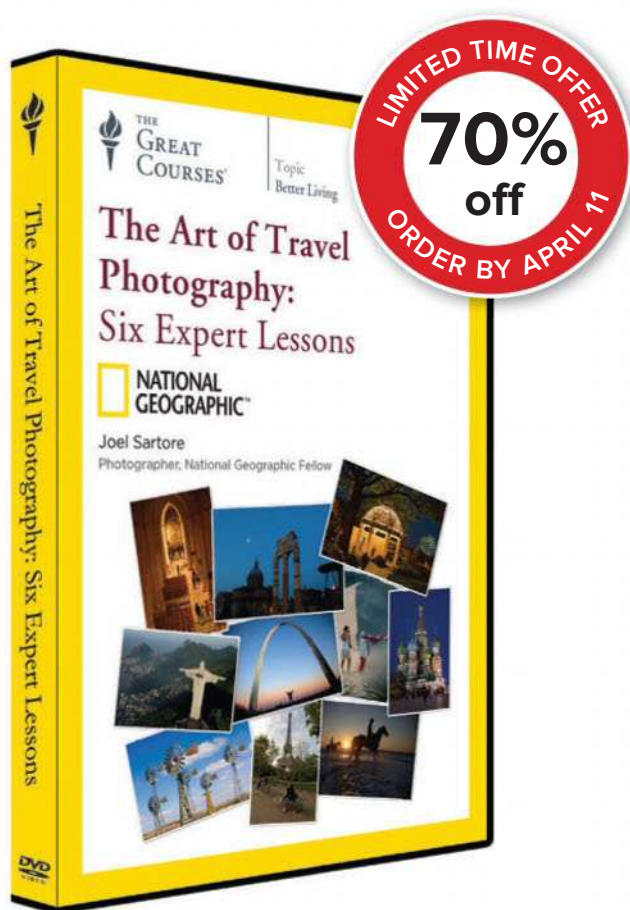
## | Nikon Df |

The retro Df puts the 16.2-megapixel, full-frame CMOS sensor from the flagship D4 into a much smaller body with a design reminiscent of Nikon's classic 35mm film SLRs, with simple control dials galore. But inside the very compact magnesium-alloy body is current high tech: 2016-pixel 3D Matrix Metering and a scene-recognition system, a versatile 39-point AF system with 3D Tracking and Auto Area AF, in-camera HDR, two- and five-frame auto-bracketing and more. EXPEED 3 processing optimizes image quality, and provides quick startup, 5.5 fps shooting and ISOs up to 204,800. And, in keeping with the back-to-basics theme, there's no video. This is a digital camera for the old-school photographer who likes to control everything without messing with multiple menus.

Despite the retro look, the Df's back is similar to other higher-end Nikon DSLRs, with a 3.2-inch, 921K-dot LCD monitor, a glass pentaprism eye-level finder that shows 100% of the actual image area and the usual DSLR buttons. But the top plate is where the action is. To the right of the pentaprism is a shutter-speed dial (4 to 1/4000 seconds, plus B, T and X, and a 1/3-step position). To the left are concentric dials: The top one contains exposure-compensation settings from +3 to -3, in 1/3-step increments.

The bottom one sets ISOs, with normal range at 100-12,800, plus L1 (50) and H1 through H4 (25,600 through 204,800). Adjacent to the shutter-speed dial is the drive-mode switch (S, CL, CH, self-timer, mirror-up, etc.). To the right of the shutter button is a simple PSAM mode selector. The key point here is, you can set, and check, all of these settings without looking at the LCD monitor—actually, without even switching the camera on.





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Joel Sartore is a professional photographer and a regular contributor to National Geographic magazine. His assignments have taken him to some of the world's most beautiful and challenging environments and have brought him face to face with a diversity of wildlife in all 50 U. S. states and all seven continents. He was recently named a National Geographic Fellow for his work on "The Photo Ark," a multiyear project to document the world's biodiversity in studio portraits. His photograph of a lion in a tree was voted the best picture by National Geographic magazine in 2011.

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## | Nikon D610 |

Nikon's entry-level full-frame DSLR, the D610 provides excellent image quality on a budget, retaining the D600's assets while adding a new shutter mechanism that ups maximum frame rate to 6 fps (from 5.5) and offers a new Quiet Continuous Shutter Mode with discreet shooting up to 3 fps. Like its predecessor, the D610 features a 24.3-megapixel, full-frame CMOS sensor and EXPEED 3 processing, with a normal ISO range of 100-6400 (expandable to 50-25,600). An updated algorithm improves white-balance performance, while 3D Color Matrix Metering II with a 2016-pixel RGB metering sensor handles the exposures.

Notable features for an entry-level camera include multiple-exposure capability, in-camera HDR, automatic time-lapse mode and intervalometer. A big eye-level optical viewfinder shows 100% of the actual image area, complemented by the 3.2-inch, 921K-dot external LCD monitor for live view and video shooting. The quick and accurate 39-point AF system is capable of autofocus at f/8, which is especially good for teleconverter users. In cropped DX mode, which the camera enters automatically when a DX lens is attached or you can select manually with any lens, the D610 produces 10.3-megapixel images with a 1.5X focal-length factor. (The viewfinder shows 97% of the actual image area in DX crop mode.) The D610 shares the ruggedness and dust/moisture resistance of the D600 (and D800), and its shutter is tested to 150,000 cycles. Top shutter speed is 1/4000. Video features include 1080p at 30 and 24 fps (25 fps PAL), and 720p at 60 and 30 fps (50 fps PAL), with continuous contrast-based AF during video shooting, when desired, and sound via a built-in mono microphone or an optional external stereo mic (there's also a jack for headphones).



## | Nikon D750 |

Nikon's latest full-frame DSLR, the D750 is a step-up model from the entry-level D610, and probably a better first full-frame DSLR for a pro. With a similar 24.3-megapixel sensor in a similarly compact (but more rugged) body and EXPEED 4 processing, the D750 can shoot at 6.5 fps. It features the same metering and 51-point AF technology as the D4S and D810 (3D Color Matrix Metering II with 91,000-pixel RGB sensor and 51-point AF that can autofocus in light levels as dim as EV -3). Built-in WiFi makes for quick and simple wireless image transfer and remote control via smart device. Normal ISO range is 100-12,800, expandable to 50-51,200. The built-in flash has a Commander mode, so it can trigger external flash units with precise exposure and color information.

The 3.2-inch, 1229K-dot LCD monitor tilts—a first for a full-frame Nikon DSLR. Video features are the same as for the D810, including both 1080 and 720 at 60p, smooth time-lapse shooting and a built-in stereo microphone plus jacks for external mic and headphones.



## | Sony SLT-A99 |

The A99 is unique among today's full-frame DSLRs in that it features a nonmoving, semi-transparent mirror, rather than the conventional SLR flipping mirror. With the Sony TMT (Translucent Mirror Technology) system, most of the light passes through the mirror to the image sensor, while a portion is directed up to the phase-detection AF sensor. Thus, you get full-time phase-detection AF, even for video. Since this system would produce a very dim viewfinder image, the A99 uses a high-resolution electronic viewfinder instead of the conventional SLR optical finder. Therefore, you get eye-level viewing, even for video. For video and live-view still fans, this is an advantage: You can shoot videos of birds in flight, for example, something you really can't do with conventional DSLRs, which have slow contrast-based AF and no eye-level viewing in Live View mode. The electronic viewfinder can also provide information an SLR prism finder can't, including previewing white balance and exposure.

The A99 is ideal for action video due to the phase-detection AF and eye-level viewing. It's good but not ideal for low-light specialists, due to the light lost to the semitransparent mirror. DPP



## FASHION IN FULL BLOOM

(Cont'd from page 50)

'Motherland Chronicles' was and I wanted to focus on it, so I didn't want to travel, and I said no to most jobs and just lived on my savings. It stayed like that for a while, but after I left the agency... it's like the universe knows. I started to suddenly receive a lot more enquiries in the U.S., and by then, I had decided to do a book and was propelled to explore fine-art work further. Now, I'm working very selectively fashion-wise, and I'm focusing mostly on producing the 'Motherland Chronicles' art book.

"I think I've always been quite fortunate in being able to be selective about the work I say yes to," she continues, "but I didn't realize that it was partially because fashion wasn't what I always wanted to do. So I always found it very easy to say no to jobs, and now I think maybe it's because of the lack of attachment to it. I grew up on Japanese comics, anime, classical art and such, and they remain such a huge influence on my work because it's what I love. Fashion was something that sort of just happened, and I kept doing it because I liked the idea of pursuing excellence in everything I do. That's very, very Chinese.

"I always placed myself on the outskirts of fashion," Zhang says, "like an outsider looking in who was sometimes invited to participate in the circus. It was interesting. It wasn't until New York that I realized just how jarringly I didn't live and breathe fashion like the people in fashion do. When I was near the end of 'Motherland Chronicles,' I decided I wanted to make a transition to fine art and, surprisingly, it has made my fashion work more fun and interesting to do. Especially when I bring it up to clients, they generally become very keen to let me lead the direction as I would in my personal work. So we'll have to see where this goes." DPP

*To see more of Zhang Jingna's work, including behind-the-scenes breakdowns of how she makes some of her more elaborate images, visit her website at [zhangjingna.com](http://zhangjingna.com). Look for her on Facebook, Twitter and Instagram through @zemotion.*

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element each among its 14 in 9 groups, and is splash-, dust- and freeze-proof. MSC provides near-silent autofocusing.

### Panasonic

Panasonic's LUMIX G X Vario 12-35mm *f*/2.8 for Micro Four Thirds cameras features four aspherical elements to control spherical aberrations and distortion, an Ultra ED element to counter chromatic aberrations and an Ultra HR (High Refraction) element for corner-to-corner sharpness. The lens is sealed against moisture and dust, and features Power O.I.S. optical image stabilization with near-silent operation for still shooting and movies.

### Pentax

While apparently a full-frame model is coming, all of Pentax's DSLRs so far have been APS-C cameras. Pentax offers a pair of pro mid-range zooms designed specifically for the APS-C sensors. The flagship DA\* 16-50mm *f*/2.8 ED AL (IF) SDM features rugged weather-resistant construction, and two ED plus three aspherical elements to combat aberrations and optimize image quality. The DA 17-70mm *f*/4 AL (IF) SDM is only 2.8 ounces lighter, but adds 20mm to the long end (equivalent to 25.5-105mm on a full-frame camera vs. 24-75mm for the 16-50mm) and costs about half as much.

### Samsung

Samsung's pro mid-range zoom is the NX 16-50mm *f*/2.8 ED OIS for its APS-C mirrorless cameras. It features an *f*/2.0 aperture at the wide end for full-frame-style minimal depth of field. A Ultra-Precise Stepping Motor provides quick, quiet AF, and Optical Image Stabilization minimizes the effects of hand-held camera shake. Three aspherical, two ED and two XHR elements minimize aberrations, maximize performance and make for a more compact lens.

### Sigma

Sigma made its name as a lensmaker before getting into the camera business, and offers a wide range of lenses for both its own cameras and other



**Sigma 24-70mm *f*/2.8 IF EX DG HSM; Tamron SP 24-70mm *f*/2.8 Di VC USD; Sony Vario-Sonnar T\* 24-70mm *f*/2.8 ZA SSM**

popular brands. For full-frame DSLRs (and film SLRs), the 24-70mm *f*/2.8 IF EX DG HSM features three ELD and two SLD elements to minimize aberrations, costs significantly less than other 24-70mm *f*/2.8 lenses currently on the market and is available in mounts for Canon, Nikon, Pentax, Sigma and Sony DSLRs. The 24-105mm *f*/4 DG (OS) HSM / A is a stop slower, but adds 50% to the long end of the focal-length range and is a member of Sigma's much lauded Art lens family. It's available in mounts for Canon, Nikon, Sigma and Sony DSLRs. For APS-C cameras, Sigma offers the 17-50mm *f*/2.8 EX DC (OS) HSM, with two FLD elements (equal in performance to very costly fluorite), three aspherical elements and a focal-length range equivalent to 25.5-75mm on a full-frame camera. Sigma's OS is available in Canon, Nikon and Sigma mounts, but not Pentax and Sony mounts (Pentax and Sony DSLRs have built-in sensor-shift stabilization that works with all lenses).

### Sony

Sony's flagship Vario-Sonnar T\* 24-70mm *f*/2.8 ZA SSM features a Carl Zeiss design, ED and aspherical elements, and an SSM Supersonic Wave AF Motor for quick, quiet autofocusing. The 28-75mm *f*/2.8 SAM offers four

aspherical elements and Sony's SAM Smooth Autofocus Motor for about half the 24-70mm's price. Both are full-frame lenses. For APS-C, Sony offers the DT 16-50mm *f*/2.8 SSM, with ED and aspherical elements and SSM motor. Sony also makes mirrorless cameras, and offers constant-aperture mid-range zooms for them. For the full-frame a7-series cameras, there's the Vario-Sonnar T\* FE 24-70mm *f*/4 ZA OSS, with Zeiss design, five aspherical elements and one ED element, and Sony's Optical SteadyShot image stabilization, as well as the FE PZ 28-135mm *f*/4 G OSS, with quiet power zooming. For Sony's APS-C mirrorless cameras, there are two choices. The E Vario-Tessar T\* 16-70mm *f*/4 ZA OSS is a Zeiss design with Sony OSS stabilization, while the E PZ 18-105mm *f*/4F OSS features Handycam-level power zooming for video and Sony's OSS stabilization.

### Tamron

Tamron offers two *f*/2.8 mid-range zooms for full-frame DSLRs and two for APS-C. The SP 24-70mm *f*/2.8 Di VC USD features Tamron's proprietary tri-axial Vibration Compensation and an Ultrasonic Silent Drive AF motor for quick, quiet autofocusing. Two XR (Extra Refractive Index) elements bend light more sharply to minimize aberrations and allow for more compact lenses, while three ED (Extra-low Dispersion) elements minimize chromatic aberrations. The SP 28-75mm *f*/2.8 XR Di features XR, LD and aspherical elements to provide a high-performance, lower-cost alternative. For APS-C, there's the SP 17-50mm *f*/2.8 XR Di II VC with Vibration Compensation and XR, LD and aspherical elements, as well as the SP 17-50mm *f*/2.8 XR Di II, without the VC, at a lower cost. All four are available in mounts for Canon and Nikon DSLRs, the SP 24-70mm also for Sony, and the SP 28-75mm and SP 17-50mm non-VC also for Pentax and Sony.

### Tokina

Tokina has a new AT-X 24-70mm *f*/2.8 Pro FX lens for full-frame DSLRs in the works, but no further information was available at press time. DPP



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4K 16 Mega Pixels

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DC 18-250/3.5-6.3 OS Macro HSM (62°)	#SI1825035M*	C, N, P, S, SA	549.00
DG 24-70/2.8 EX IF HSM (82°)	#SI247028*	C, N, P, S, SA	899.00
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DG 70-200/2.8 EX OS HSM (77°)	#SI7020028*	C, N, S, SA	1,399.00
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## SONY

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55-200/4.0-5.6 DT (55°).....	198.00		
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16 Mega Pixels

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Nikon 1 Mirrorless Lenses			
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85/1.4 ED SSA.....	CALL	18-55/3.5-5.6 OIS.....	CALL
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16-50/3.5-5.6 ED OIS.....	CALL	20-50/3.5-5.6 ED OIS.....	CALL
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# Misinformation

## Camera Tech

### | The Drone Wars

**Myth:**  
**Pros Can't**  
**Use Drones**

Unmanned aerial vehicles, or drones, have been increasing in popularity among photographers and videographers for the past few years. In 2015, we're poised for a dramatic upswing because two things are happening. First, there are more manufacturers with high-quality imaging solutions coming online and, second, the drones are becoming much easier to use.

When photographers and filmmakers think of drones, we're primarily thinking of multirotor radio-controlled aircraft. A few years ago, if you were looking to get a camera onto a drone like this, your first stop would be a model radio-control shop and you'd be spending many hours with Google finding out how to build, program and fly. When the DJI Phantom quadcopter arrived, everything changed.

At the time the Phantom came out, professional filmmaking crews had been using multirotor drones in commercials, features and other productions. These tended to be powerful, custom-built models, but some were being offered in kit form. These drones were specialized to carry the heavy payload of a large-ish camera, and they definitely needed to be handled by an experienced pilot. Looked at one way, any drone is a flying lawn mower, and without proper attention to safety, things can go very wrong in a hurry.

DJI didn't invent the quadcopter, they simply created a reasonably priced quad that was pretty much ready to fly right out of the box. The Phantom came with a radio and all of the key components installed, connected and prepped for flight—just charge the batteries and take off. Prior to the Phantom, if you



DJI Phantom

wanted to be a drone flyer, you were pretty much going to be a drone builder and tools like soldering irons and multi-meters would see heavy use.

The other great advancement that DJI brought to the Phantom was a brushless gimbal system that could carry a GoPro camera. R/C-ers had been flying quads with cameras, but they were mostly lower-res and primarily for first-person-viewer (FPV) systems. With the Zenmuse gimbal, DJI had a sophisticated tool that allowed you to use the higher image quality of a GoPro and the camera would remain steady even as the copter tilted this way and that in the wind. GoPros have their limitations; mounting one on a drone and getting steady images was a huge advancement.

In 2014, there were a few drone manufacturers on the show floor at CES. In 2015, there was an entire section of the show floor dedicated to drones, with a caged-in flight area. DJI had their latest drone, the Inspire 1, which has a new, integrated 4K-capable camera and a new gimbal to keep the images steady. At the 2015 NAB show, we expect to see even more multicopters that can carry larger and more sophisticated cameras and gimbals.

**>> More On The Web**  
Go to the DPP website at [www.digitalphotopro.com](http://www.digitalphotopro.com) to learn more about cutting-edge technology and how it's changing photography.

Amidst this explosive growth, there also has been a lot of confusion about using cameras on a drone. The FAA is scheduled to clear things up in late 2015, but until then, things are a little murky. Some maintain that a camera-mounted drone can't be used for any commercial purpose. Does making a short film that you're going to post to Vimeo or YouTube qualify as commercial? Can you shoot something for a paying client with a drone? These are pretty open questions and, at the moment, the answers are fuzzy. In the future, some kind of a licensing system could be put into practice, along with regulations, permits and insurance requirements. For now, a few resources to keep in touch are the [dronelaw.net](http://dronelaw.net) blog and the [www.knowbeforeyoufly.org](http://www.knowbeforeyoufly.org) website.

Above all, the single most important thing you can do is don't be stupid. For example, flying a drone over a populated area is pretty dumb. Many flight controllers are preprogrammed to prevent you from being really stupid and trying to fly near an airport or various government buildings, but no programming substitutes for your own common sense. Become a good pilot before you try to become a good aerial photographer.

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